

**The Development of a South African Legal Framework relating to
Patentable Inventions made by Employees**

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ABSTRACT

This thesis answers the question of how South Africa ought to regulate ownership of patentable employee-inventions within the prevailing patent system. It is concerned with developing a South African legal regulatory framework for an optimal default allocation of ownership in patentable inventions made by employee-inventors in the private sector. It approaches this concern from the perspective that the law relating to ownership of employee-inventions should align with the purpose of patents as tools for encouraging private sector investment in technological innovation. This perspective is informed by a theoretical framework based on assumptions about, amongst other things, the role of patents as individual incentives, the nature of inventorship, and the likely incentive effect of a grant of a patent on employers' and employee-inventors' contributions to inventive activity.

The core of the thesis is an analysis of the South African law relating to the allocation of ownership of patentable inventions between employers and employees to determine whether and how it supports the incentive function of the patent system. This includes a consideration of the ownership of intellectual property which may arise as a consequence of the inventive activity and which attract statutory protection in the form of copyright, industrial design rights, and plant breeders' rights. In the absence of international guidance and a dearth of sources about the South African approach, an examination of the British and American approaches provides insight into divergent legal regulatory responses to the same issue.

A key conclusion is that the prevailing South African law does not provide for an efficient legal framework for the allocation of patent rights between employers and employees when reviewed against the purpose of the patent system in the innovation context. Based on this and other conclusions about the factors which ought to inform the regulation of the allocation, recommendations for a new legislative framework which is responsive to the purpose of patents as individual incentives, but which is also cognisant of the dynamics of the employment relationship, are made.

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ACRONYMS & ABBREVIATIONS

AIA	Leahy-Smith America Invents Act of 2011
BCEA	Basic Conditions of Employment Act 75 of 1923
Berne Convention	Berne Convention for the Protection of Literary and Artistic Works 1886
BPA 1949	British Patents Act 1949
BPA 1952	British Patents Act 1952
BPA 1977	British Patents Act 1977
Budapest Treaty	Budapest Treaty on the International Recognition of the Deposit of Micro-organisms for the Purposes of Patent Procedure
CA 1978	South African Copyright Act 98 of 1978
COIDA	Compensation for Occupational Injuries and Diseases Act 130 of 1993
Constitution	Constitution of the Republic of South Africa, 1996
DACST	South African Department of Arts, Culture, Science and Technology
DA 1993	South African Designs Act 195 of 1993
DST	Department of Science and Technology
Dti	Department of Trade and Industry
EEA	Employment Equity Act 55 of 1998
EPC	European Patent Convention 1973
EPO	European Patent Office
ILO	International Labour Organisation
IPIC	Strausbourg Agreement Concerning the International Patent Classification
IPPFRD Act	Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008
IPR Framework	DST 'IPR and Public Funded Research Policy Document' 'Intellectual Property Rights (IPR) from Publicly Financed Research Framework' July 2006
IPPRFD Reg	Regulations made in terms of section 17 of the Intellectual Property Rights from Publicly Financed Research and Development Act, 2008 (Act no. 51 of 2008) GN R675 published in GG 33433 2 August 2010
LRA	Labour Relations Act 66 of 1995
Meeting	ILO Tripartite Meeting on Salaried Authors and Inventors 'The Protection of Salaried Authors and Inventors' Geneva 1987 TMSAI
Model Law 1965	BIRPI (WIPO) Model Law for Developing Countries on Inventions 1965
Model Law 1979	WIPO Model Law for Developing Countries on Inventions 1979 Vol 1 Patents

NIPMO	National Intellectual Property Management Office
NRDS	Department of Arts, Culture, Science and Technology <i>National Research and Development Strategy</i> August 2002
NSI	National System of Innovation
OECD	Organisation for Economic Co-operation and Development
OHSA	Occupational Health and Safety Act 85 of 1993
PA Reg	Patent Regulations, 1978 GN R2470 in GG 6247 of 15 December 1978
PBRs	Plant breeders' rights
PDTCA	Patents, Designs, Trade Marks and Copyright Act 9 of 1916
PA 1952	South African Patents Act 37 of 1952
PA 1978	South African Patents Act 57 of 1978
Paris Convention	Paris Convention for the Protection of Industrial Property 1883
PBRA 1964	South African Plant Breeders' Rights Act 22 of 1964
PBRA 1976	South African Plant Breeders' Rights Act 15 of 1976
PCT	Patent Co-operation Treaty
Report 1988	ILO Report of the Tripartite Meeting on Salaried Authors and Inventors 24 November-2 December 1987 Geneva 1988 TMSAI/1/1987/9
Resolution	ILO Advisory Committee on Salaried Employees' Resolution concerning the Protection of Salaried Employees' Inventions International Labour Office (League of Nations) <i>Industrial and Labour Information</i> vol XXXVIII (April-June 1931)
S&T	Science and Technology
SKA	Skills Development Act 97 of 1998
Ten-Year plan	DST Ten-Year Innovation Plan
TRIPS	Trade-related aspects of intellectual property rights Agreement on Trade-related Aspects of Intellectual Property Rights (Annex 1C of the Marrakesh Agreement Establishing the World Trade Organisation of 15 April 1994 (entered into force 1 January 1995)
UPOV	Union for the Protection of New Varieties of Plants
USA	United States of America
USC 35	United States Code Title 35
WIPO	World Intellectual Property Organisation
WTO	World Trade Organisation

CHAPTER 1

INTRODUCTION

1.1 WHAT THIS THESIS IS AND WHAT IT IS NOT

This thesis develops a legal regulatory framework for the allocation of ownership of patentable inventions¹ made by inventors employed in South Africa. It approaches this task from the perspective that an optimal allocation is one which aligns with the purpose of the patent system as a tool for encouraging inventive activity to drive technological innovation. It is not a thesis on innovation theory, nor does it test the legitimacy of the patent system as a driver of technological advancement. The research question asks how South Africa ought to regulate ownership of patentable employee-inventions between employers and their employees within the confines of the current patent system. In order to provide a context in which to answer this question, various assumptions about the peculiarities of employee-inventorship and the role of patents as individual incentives underpin the research and inform the particular conceptualisation of what an optimal allocation should comprise. The result is a recommendation for legislative reform to introduce a regulatory framework which facilitates a default allocation of ownership and aligns with the purpose of the patent system in South Africa.

This chapter serves as a guide to the thesis. It explains the reason for the research, the nature of the enquiries undertaken in answering the research question, the scope of the endeavour, and very importantly, the assumptions which underpin this work.

¹ References to 'invention' are to patentable inventions unless the context indicates otherwise. A patentable invention is one which meets the criteria for patent protection. The rights in such an invention include the right to apply for the patent and the patent itself. In this thesis no distinction is made between references to 'ownership of patents on employee-inventions' and 'ownership of patentable employee-inventions'. The term 'employee-inventor' refers to an individual who meets the statutory definition of 'inventor' and who is employed. It is used interchangeably with 'employed inventor', unless otherwise indicated.

1.2 BACKGROUND

Globalisation, coupled with the increasing value placed on knowledge-intensive goods, has resulted in growing concern about the effect of intellectual property rights on trade flows of such goods. Patents are arguably the most contentious of the recognised intellectual property rights. Sometimes welcomed, at other times vilified, they are private rights which have a profound public effect. Cornish describes them as ‘the most basic, the most valuable, and to competitors, potentially the most dangerous, of all intellectual property’.²

Conventional rhetoric holds that the patent system is a driver of economic development through the role it plays in stimulating innovation. It is somewhat ironic that the exponential increase in the use of the system since the start of the industrial revolution, has also attracted increasing criticism.³ The nature of the vilification varies depending on both its source and its target.⁴ It includes the rejection of claims that increased patents result in enhanced economic growth,⁵ scepticism that the system benefits developing countries,⁶ concerns about patent thickets stifling innovation,⁷ and criticism of the inflated price of patented goods. A befitting testimony to the identity-crisis in which the system finds itself, is the European Patent Office’s (‘EPO’) project to identify various scenarios for the development of the patent system in a way that will ensure that it can ‘provide those crucial incentives to innovators developing new answers to today’s problems’ while ‘also ensuring that the interests of society – of all societies in the world – are also served’.⁸

² Cornish W, Llewelyn D & Aplin T *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights* 8ed (2013) 8. See also Teljeur E *Intellectual Property Rights in South Africa: An economic review of policy and impact* (2002/3) 11; Pouris A & Pouris A ‘Patent and economic development in South Africa: Managing intellectual property rights’ (2011) 11/12 *S Afr J Sci* 107 1.

³ See Straus J ‘Is there a global warming of patents?’ (2001) 11 *Journal of World Intellectual Property Law* 58; Lerner J ‘The patent system in a time of turmoil’ (2010) 2(1) *WIPO Journal* 28.

⁴ See European Patent Office *Scenarios for the Future* (2007) 13.

⁵ See, for example, the discussion in Dutfield G & Suthersanen U *Global Intellectual Property Law* (2008) 6.

⁶ Dutfield & Suthersanen (n5) 8-9.

⁷ See, for example, EPO (n4) 17.

⁸ *Id* 13.

Although the patent system is the site of ongoing contestation, it shows no sign of waning.⁹ Despite the obvious disparities in how the patent system is experienced and perceived, it remains linked to its role as a driver of economic development. Therefore, while national patent filings may fluctuate depending on domestic drivers, the statistics on the use of the Patent Co-operation Treaty ('PCT') for 2013-2014¹⁰ show that patenting activity generally has increased and reflects a growth in international patent applications.

The basis for national patent systems is found in two international instruments: the Paris Convention for the Protection of Industrial Property¹¹ ('Paris Convention') and the Agreement on Trade-Related Aspects of Intellectual Property Rights¹² ('TRIPS Agreement'). Although there is no single worldwide system for the registration of a 'global' patent, adherence to these instruments means that national systems reflect certain commonalities. The nature of a patent in all countries which have adopted the system, is therefore similar. Simplistically, a patent is a state-granted dispensation which secures for the patentee economic control over certain technological inventions to the exclusion of others. In exchange for a limited period of economic exclusivity, the state imposes substantive and procedural requirements – in particular that the invention be new, not obvious, and that it be disclosed to the public. Once the patent has been granted it is generally left to the patentee's discretion to decide how, if at all, to commercialise the invention. The most common

⁹ See for example on worldwide patent surges in Fink et al 'Exploring the worldwide patent surge' WIPO Economics and Statistics Series 2013 Working Paper No 12. The authors observe that between 1982 and 1995 patent filings were between 800 000 and one million a year but then grew to 2.14 million in 2011. See also Grandstrand O 'Intellectual property rights for governance in and of innovation systems' in Andersen B (ed) *Intellectual property rights: Innovation, governance and the institutional environment* (2006) 315-6 on the emergence of stronger intellectual property rights even in the face of criticism.

¹⁰ WIPO 'Patent Cooperation Treaty Yearly Review' 9-10. See also yearly review for 2015 available at <http://www.wipo.int/publications/en/details.jsp?id=3923>.

¹¹ Paris Convention for the Protection of Industrial Property 1883, as amended.

¹² Agreement on Trade-related Aspects of Intellectual Property Rights (Annex 1C to the Marrakesh Agreement Establishing the World Trade Organisation of 15 April 1994 (entered into force 1 January 1995).

justification for the creation of this 'monopoly' sees the system as an incentive mechanism to encourage technological advancement, ultimately to the benefit of the public. Ownership of the patent serves as an inducement for the producers of inventions to engage in inventive activity.

Ownership of the patent is, however, not dictated in either the Paris Convention or the TRIPS Agreement, although they both recognise an inventor's right to be identified as such.¹³ Neither instrument explains how inventorship is to be determined. The paradigmatic approach has been both to associate the inventor with the individual responsible for the intellectual conception of the subject matter of the invention, and to vest initial entitlement to the patent in him or her. The reality, however, is that most inventive activity happens in the corporate context and patentees are corporate bodies.¹⁴ In many cases the individual inventors are or were employed by the corporate patentees¹⁵ who have invested in the research which resulted in the patentable invention. For these corporate investors, patenting is a mechanism through which they are able to recoup their expenses and profit from their investment in innovative activities.

However, the paradigmatic model which associates inventorship with individual intellectual work, ignores the resource contribution made by corporates.¹⁶ Consequently, corporate patent ownership depends on acquisition of title to the invention from the employee-inventor. This precipitates the dual dynamic which characterises issues of ownership of employee-made inventions. On the one hand the employer must negotiate with the employee to be able to recoup its investment in the invention – a situation which inevitably attracts transaction costs given that the

¹³ Paris Convention (n11) art 4~~ter~~ incorporated into the TRIPS Agreement.

¹⁴ See for example, Dratler J 'Fixing our Broken Patent System' (2010) 14 *Marquette Intellectual Property Law Review* 50.

¹⁵ See similar sentiment by Simmons J 'Inventions made for hire' (2012) 2 *NYU Journal of Intellectual Property and Entertainment law* 2.

¹⁶ See Cherensky S 'A penny for their thoughts: Employee-inventors, preinvention assignment agreements, and personhood' (1993) 81 *California Law Review* 595 who described it at 626 as an 'antiquated and rigid conception of inventorship'; Dratler (n14) 50.

employee holds the invention as a bargaining chip.¹⁷ On the other hand, any disadvantage to the employer may be eliminated by the inequality in bargaining power between the parties which arises from the employee's ongoing dependency on the employer for work. In the latter case, the grant of the patent to the employee-inventor does little to incentivise the individual if he or she is not sufficiently compensated for the dispossession.

This disjuncture between inventorship and default ownership is not resolved in the international instruments.¹⁸ However, the tensions which arise as a consequence of this misalignment of first ownership and the incentive function of patents have spurred many countries to deviate from the archetypal recognition of the inventor as the default owner and to recognise the role of corporate investment in the development of inventions.¹⁹ This notwithstanding, there is no standard response and the deviations are nuanced by domestic 'historical, economic, political, cultural, and social characteristics'²⁰ which shape the local conceptualisation of the issue of employee-inventions. This is evidenced by the diversity of emphasis in the range of scholarly literature dealing with employee-inventions in various jurisdictions, and the

¹⁷ See discussion in Merges R 'Autonomy and independence: The normative fact of transaction costs' (2011) 53 *Arizona Law Review* 1.

¹⁸ Takenaka T & Reboul Y 'Employee invention system: Comparative law perspective' in Takenaka T (ed) *Intellectual Property in Common Law and Civil Law* (2013) 366. See also BIRPI (WIPO) Model Law for Developing Countries on Inventions 1965 Geneva ('WIPO Model Law 1965') 12; Greenberg S 'The WIPO Model Laws for the protection of unpatented know-how: A comparative analysis' (1985) *Int'l Tax & Bus Law* 52-55. See also the work of the AIPPI from the 1960s to 2004 on employee-made intellectual property. The AIPPI is a private international organisation dealing with intellectual property issues generally and mainly from the rightsholder's perspective. It passed a Resolution in 2004 on the issue of employee-made intellectual property. See AIPPI Resolution Question 183 'Employer's right to intellectual property' 2004 and further documentation on the various resolutions (eg in 1967 as well) on related concerned. See www.aippi.org.

¹⁹ This is not a recent phenomenon with the first employee-invention regulation probably having been adopted as early as 1897 in Austria. Countries which have amended their legislation or passed new legislation to deal with the ownership in employee-inventions, include Argentina, Austria, Brazil, Bulgaria, Denmark, Egypt, Greece, Hungary, Philippines, China, Germany, Finland, France, Italy, Britain, Japan, Mexico, Sweden, Czechoslovakia, Columbia, and Singapore.

²⁰ Lo V 'Employee inventions and works for hire in Japan: A comparative study against the US, Chinese, and German systems' (2002) 16 *Temple International and Comparative Law Journal* 280.

tendency to offer general expositions in preference to integrated comparisons between systems.²¹ Takenaka and Reboul posit that the ideal system is one which 'is based on a fine balance between interests of employers and inventors for giving inventors incentive to invent while guaranteeing their employers enough rewards for commercialization'.²²

There is little, if any, likelihood that an international default rule to regulate employee-inventions will be on the international agenda of either intellectual property or labour law fora in the foreseeable future. This is perhaps inevitable in light of the complexity arising from the implication of multiple areas of law, and is captured by Lee and Langley: 'In patent law ownership of inventions is granted to inventors. In labour law, on the other hand, the product of employees' labour belongs to employers. Contract law provides a further ingredient in that parties are free to bind themselves as they see fit, and obtain the benefit any bargains reached.'²³

In South Africa the government has identified innovation as a key economic driver and has affirmed the patent system as a tool for economic growth. The need to align the system with the innovation goals is clear from the introduction of legislation to regulate the allocation of rights in publicly-financed intellectual property.²⁴ However, even though a substantial proportion of research and development is undertaken by corporates in the private sector, with patentable inventions being made by employee-inventors. Interestingly, a similar deviation from the archetypal default allocation of inventor-ownership in relation to privately financed patentable inventions, has not been introduced.

It is against this background that I explore the South African legal regulatory framework for the allocation of ownership in patentable inventions between

²¹ The references in Chapters 2 and 5 provide ample examples of these phenomena.

²² Takenaka & Reboul (n18) 368.

²³ Lee Y & Langley M 'Employees' inventions: Statutory compensation schemes in Japan and the UK' (2005) 27 *EIPR* 250.

²⁴ See Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 which came into effect in 2010.

employers and employees to determine whether it supports the incentive function of the patent system.

1.3 RESEARCH QUESTION, AIMS, AND OBJECTIVES

This thesis is a response to the research question: How ought South Africa to regulate the allocation of first ownership in privately-funded patentable inventions between employers and employee-inventors? The underlying hypothesis is that the allocation of ownership in patentable inventions must align with the purpose of the patent system, and that if the current regulatory model fails to do so, then an alternative regulatory model is required.

The aim is to develop a default legal regulatory framework for the allocation of ownership in employee-made patentable inventions which can be applied across employment sectors. In order to achieve this aim, five main objectives inform the six chapters which make up the body of the thesis.

The first objective is to develop a theoretical framework through which to conceptualise the challenges associated with the allocation of ownership in employee-inventions. This framework serves as an employee-invention specific paradigm through which to conduct the analysis of the South African and selected foreign systems.

The second objective is to analyse the South African approach to entitlement to employee-inventions in the context of the employee-invention paradigm which has been constructed.

The third objective is to provide a national context through an examination of the ownership of employee-made intellectual property which arises as part of the inventive process or which serves as an alternative to the Patents Act²⁵ ('PA 1978'). This examination is instructive of the types of regulatory response to ownership allocation of intellectual property rights adopted by the legislature. It also provides

²⁵ Act 57 of 1978.

an opportunity to consider the potential problems which accompany those types of response.

The fourth objective is to explore the responses of two foreign systems which are similarly plagued. The British and American systems serve as examples of innovative countries which have adopted different approaches to the allocation of employee-inventions. Their experiences provide a basis for evaluating the potential value of similar responses being followed in South Africa. The reason for selecting these jurisdictions is explained in 1.6. below.

The final objective is to draw conclusions from the preceding chapters and to offer recommendations for the development of a regulatory framework for the allocation of ownership in patentable inventions made in the employment context based on those conclusions.

1.4 RESEARCH BY CHAPTER

The five objectives are met in the following way.

Chapter 1 is an introduction to the substance and structure of the research. Importantly, it establishes the assumptions that have been made in the thesis and how the scope of the research has been limited.

Chapter 2 constructs a theoretical framework through which to conceptualise entitlement to patents for employee-made inventions. The chapter opens by establishing a link between the goals of innovation and the patent system, and sets out the assumptions as to the purpose of patents on which this thesis is built. More specifically, it explains how the incentive function in the patent system must be conceptualised. It then introduces the main characteristics of the patent system which affect the realisation of the incentive function. Inventorship is identified as a key determinant of entitlement.

Once this general patent paradigm has been introduced, the challenges posed by the corporate inventive context are factored in to offer an alternative view of the

system which will serve as a basis for determining the features of an optimal default allocation. This is done by establishing a link between inventorship, the employment relationship between the corporate investor and the inventor, and the allocation of rights in the patent. By revisiting the incentive function as construed in the first part of the chapter – but now in the context of employee-inventions – a number of assumptions are introduced into the framework. These relate to the legal conditions most likely to support the incentive function in the patent system by fostering both individual and corporate contributions. It is against this conceptualisation of the incentive function that the conclusions and recommendations are finally made in Chapter 6.

Chapter 3 examines the South African legal regulation of ownership in patentable inventions made by employees. There are two aspects to this. The first is to understand the underlying policy considerations that inform the development of the patent system; the second is an analysis of the current South African system for allocating ownership in employee-inventions to determine whether it suits its purpose in light of the employee-invention paradigm established in Chapter 2.

Chapter 4 accomplishes the third objective by surveying the allocation of ownership in intellectual property under the Copyright Act ('CA 1978'),²⁶ the Designs Act ('DA 1993'),²⁷ the Plant Breeders' Rights Act ('PBRA 1976'),²⁸ and the Intellectual Property Rights from Publicly Financed Research and Development Act ('IPPFRD Act').²⁹ In the course of the development of an invention, the preparatory material produced may constitute non-patentable intellectual property. Therefore, compilations of data and general written documentation, for example, may be eligible for protection as literary works under copyright legislation, while technical drawings could constitute artistic works. Industrial research may also give rise to intellectual goods which may be protected by alternative registered intellectual property rights, such as industrial designs and plant varieties. In addition, even where patents are granted, their

²⁶ Act 98 of 1978.

²⁷ Act 195 of 1993.

²⁸ Act 15 of 1976.

²⁹ Act 51 of 2008.

ownership will depend on whether they have been created under conditions which attract the IPPFRD Act.

Chapter 5 offers an exposition of the British and USA patent systems to provide insight into alternative national responses to the entitlement to patents in the employment context. The basis for selection of these specific countries is explained in 1.8. and the scope of their use in 1.6. below.

Chapter 6 is made up of two parts: Conclusions and Recommendations. First, a number of observations from the preceding chapters are made and from these, conclusions are drawn as to the state of the South African system and what would contribute to an optimal regulatory framework. Secondly, the chapter offers recommendations for improving the system, if necessary, in light of the conclusions. Here I suggest a statutory amendment which aligns ownership in employee-inventions and the purpose of the patent system in a way that takes account of the dynamics of the employment context. I consequently review the provisions of the existing South African system against the indicators of an optimal allocation, conceptualised in Chapter 2, to determine the suitability of the current regulatory approach. The observations made in Chapters 4 and 5, serve as a source for alternative approaches both from within the South African legal system, and from outside.

1.5 ASSUMPTIONS

The theoretical framework for this thesis is premised on certain assumptions which are not examined further in the chapters which follow although they may be elaborated upon in some respects in Chapter 2. The assumptions are:

1 *That the inventions in dispute are patentable*

This thesis is concerned with patentable inventions, in other words, inventions which attract patent law ownership rules. It is assumed that the inventions under discussion meet the patentability criteria, such as novelty, inventiveness, and industrial applicability.

2 *That employers are juristic persons*

Although a natural person may be an employer, in the context of this thesis, references to an employer are to a juristic person. Therefore, as regards inventorship, for example, a distinction is drawn between the natural persons who make the actual intellectual contribution, and the employers whose contribution can only be indirect, for example through resource contributions.

3 *That inventive activity in a corporate context where inventors are also employees, exhibits the particular characteristic as discussed in Chapter 2*

It is acknowledged that modes of inventorship differ and that the nature of employment is not static. However, for the purposes of this thesis Chapter 2 posits a corporate inventorship landscape which exhibits characteristics peculiar to both these aspects. These include, for example, that there are substantially more employed inventors now than in previous years, and that much corporate inventive activity exhibits characteristics of disaggregation and multiple contributions. As regards the employment context, it is assumed that employers and employees have unequal bargaining power and that this is a real consideration even though it is acknowledged that the nature of the power differential may be influenced by the type of work and the particular skills of the employee.

4 *That innovation drives economic development*

There are two elements to this assumption both of which are explained in greater detail in Chapter 2. The first is that this thesis does not engage with theories of innovation, but rather adopts a narrow view of technological innovation. Secondly, it is assumed that an increase in technological innovation has a positive effect on countries' economic development in general.

5 *That the patent system is a positive driver of technological innovation*

Although the patent system is commonly associated with its role as a driver of technological innovation, there is also opinion to the contrary. This thesis does not engage with those arguments, but assumes that the grant of a patent can and does play a positive role in influencing the individual decision to engage in inventive activity. Therefore, the focus is on the positive impact of the patent system even

though there may be drawbacks. Chapter 2 provides further explanation of this assumption.

6 *That the patent system can be justified on utilitarian grounds*

The exclusionary nature of intellectual property rights has resulted in the search for justifications forming an almost inevitable starting point for debate on intellectual property matters. There is no single theory or philosophy which unequivocally underlies all types of intellectual property rights. Specifically in respect of patents, justification theories abound; these may overlap in some respects and be completely at odds in others. Even if core theories can be identified, these are usually further qualified, for example, by the perspective that is adopted (such as economics or property-based perspectives); whether they are deontological or consequentialist in nature,³⁰ or by distinguishing between natural rights and contract-based approaches.³¹

Commonly acknowledged theories – in other words theories which would not be considered controversial in light of the overwhelming body of scholarly work devoted to theorising about patents – are the utilitarian theory, the Lockean (labour) theory, the personality theory, and the social planning theory.³² Each of these is open to criticism and their validity depends on the particular purpose to which they are put – for example, labour theory may be more easily justified in copyright than in patents. I do not engage with the merits of each of these theories which receive sufficient attention in a growing body of more specialised literature.³³

³⁰ See, for example, Spinello R & Bottis M *A Defense of Intellectual Property Rights* (2009) 167; Dutfield & Suthersanen (n5) 48-52.

³¹ See also Grandstrand (n9) 318 for a comparison of the traditional and newer economic rationales for the patent system.

³² See Fisher W 'Theories of Intellectual Property' in Munzer S (ed) *New Essays in Legal and Political Theory of Property* (2001).

³³ It is a futile exercise to attempt to list the body of writing in this area. Examples include Spinello & Bottis (n30) Ch 5; May C & Sell S *Intellectual Property Rights A Critical History* (2006) 17; Merges R *Justifying Intellectual Property* (2011); Hughes J 'The Philosophy of Intellectual Property' (1988) 77 *Georgetown Law Journal* 297; Hettinger E 'Justifying intellectual property' (1989) *Philosophy and Public Affairs* 31; Drahos P *A Philosophy of Intellectual Property Rights* (1996); Lemley M 'The myth

In the absence of a single, uncontested rationale for patents, this thesis aligns itself most closely with a utilitarian approach which aims at public welfare as its underlying justification. This utilitarian formulation manifests in economics-based arguments that companies will not invest in the development of innovative products if they cannot recoup their investment and also profit. In this thesis, the formulation adopted is that the social goals of public wealth through innovation can be achieved by using patents as incentives. This appeal to the incentive function is arguably the most common justification for patents – even in the absence of incontrovertible evidence of its success.³⁴ However, the success of the system from this conventional utilitarian approach is, as Merges notes, dependent on ‘striking the right balance’ so that the policy ‘equilibrates the scale at just the right point – the point that maximizes the number and quality of new creative works without costing society and arm and a leg’.³⁵ This he notes is a ‘simple but, practically speaking, not at all easy’ task so that ‘[t]he sheer practical difficulty of measuring or approximating all the variables involved means that the utilitarian program will always be at best inspirational’.³⁶ That inspirational formulation is summed up by Suthersanen who advises that

‘[t]he revised current theory is that patents are tools for economic advancement that should contribute to the enrichment of society through (i) the widest possibility availability of new and useful goods, services and technical information that derive from inventive activity, and (ii) the highest possible level of economic activity based on the production, circulation and further development of such goods, services and information’.³⁷

The benefit to society is that ultimately new products and processes are made available to the public. In this way, patents enhance social welfare by incentivising innovation which may not have otherwise have occurred. Social welfare is also enhanced when the patent system is correctly calibrated so that when the patent is awarded to the correct person, the rights granted are proportionate to the benefit the

of the sole inventor’ (2012) 110 *Michigan Law Review* 709. See Andersen (n9) on the various justifications and the challenges them, in particular 117-127 on the economics-based rationales.

³⁴ See, for example, Hettinger (n33) 47.

³⁵ Merges (n33) 2-3.

³⁶ *Ibid.*

³⁷ Suthersanen U & Dutfield G ‘Innovation and the law of intellectual property’ in Suthersanen U, Dutfield G & Boey Chow K *Innovation Without Patents* (2007) at 14.

public receives in exchange. In other words, the public interest is fully served by the disclosure of the invention in the patent specifications and by the fact that 'after a certain period of time, these legal rights are extinguished and the now unprotected inventions are freely available for others to use and improve upon'.³⁸

In this thesis, I formulate the incentive theory in a way that assumes that the purpose of the patent system is to fuel innovation by incentivising the generation of new ideas in the form of inventions. The exclusionary nature of the patent system is justified by the increase in social welfare that comes with the dissemination of the new knowledge through the patent disclosure. Whether or not the incentive offered is proportionate to the social welfare that results from the dissemination of information, either in the patent specification or through the availability of the new technology through commercialisation, is not in issue here.

7 *That the patent system encourages inventive activity by incentivising such behaviour by individual contributors*

I assume that if the patent system is constructed as an individual incentive mechanism as advocated in Chapter 2, it will have a positive impact on inventive activity. It is not possible to prove that the existence of the patent system is what moves people to invent. Indeed, this is a common criticism of the *ex ante* incentive theory. Although I accept the conventional approach that the patent system acts as an incentive, this is based on a very specific and narrow conceptualisation of the incentive function.

1.6 SCOPE OF THE RESEARCH

The title of this research is 'The Development of a South African Legal Framework relating to Patentable Inventions made by Employees'. This has the potential to raise myriad issues related to, amongst other things, intellectual property rights generally and patents specifically, economics, employment law, labour regulation, innovation theory, and contract. However, this thesis is narrowly directed towards finding a legal

³⁸ Suthersanen & Dutfield (n37) 14. For discussion on whether the disclosure element is in fact useful, see Lemley M 'Ignoring Patents' in Shimanami R *The Future of the Patent System* (2012) 79.

regulatory response, and is delineated by the underlying assumptions set out in 1.5 above as well as the considerations set out below.

Firstly, inventive activity which leads to patentable inventions occurs across industries and at all levels within enterprises. The thesis is concerned with establishing a regulatory legal solution that is adaptable to employee-inventions generally in South Africa. Consequently, it is not concerned with companies' internal patenting strategies or with industry and sector-specific patenting phenomena. The reasons underlying the choice of a particular patenting strategy are internal corporate decisions which may relate to any of a number of issues, including the nature of the industry, the size of the company, the ethos of the company, and the possibility of more appropriate ways to commercialise intellectual products. Similarly, the patent system is not equally, or even necessarily, advantageous for all industries, and technological innovation may be more readily associated with industries such as biotechnology, electronics, software, and pharmaceuticals.

Secondly, as explained above, the construction of how patents act as individual incentives for employers and employees is premised on a number of assumptions about the effect of patents at that individual level, and more generally at an innovation level. This thesis is not directed towards conducting empirical research into these matters; such an exercise is far beyond the scope and goals of this contribution.

Thirdly, inventions are only one type of intellectual property generated by employees. My focus is on how the allocation of first ownership in the patent for an invention made by an employee aligns with the purpose of patents. It is not within the scope of this work to consider other bases which may give rise to remedies relating to employee-made inventive activity (which may or may not be patentable) such as restraint of trade agreements in terms of which employees may be obliged to refrain from interfering with or using an invention, non-disclosure agreements, unlawful competition, or unjustified enrichment. Consequently, for example, the effect of common-law confidentiality obligations on employee-ownership of patentable

inventions which may arise in the context of unlawful competition, are not considered.³⁹

Fourthly, my concern is with patentable inventions which do not attract the provisions of the IPPFRD Act, or any other industry or enterprise-specific legislation,⁴⁰ although Chapter 4 does include a necessary discussion of the regulation of publicly-financed inventions in South Africa. I carry this focus on the private sector through to the analyses of other South African intellectual property rights in Chapter 4, and of foreign jurisdictions in Chapter 5.

Fifthly, the discussion is limited to employment relationships characterised by an ongoing work relationship between the parties and may be distinguished from the self-employed or independent contractor or worker who may also be 'employed', in the broad sense, to invent.

Finally, modern inventorship is characterised by teamwork and collaboration. In the employment context, it is likely that more than one person – including employees and third parties – will meet the legal requirements for inventorship in respect of a single invention. In such a case, the issue of co-ownership arises. The discussion is, however, limited to the single inventor and employer as representative of the principles and would apply to multiple parties with the necessary changes.

1.7 THE RELEVANCE AND ORIGINALITY OF THIS THESIS

South Africa has embraced the patent system as a tool for economic growth through its role in government's innovation strategy. A substantial portion of investment in research which may lead to patentable inventions, is derived from the private sector and carried out by employees of private corporations. Yet, as this thesis will show,

³⁹ It is accepted though that while such a disaggregated approach is common, the issues inevitably intertwine around the concern with restricting employee mobility. See for example, Hyde A 'Intellectual property justifications for restricting employee mobility: A critical Appraisal in light of the economic evidence' (2010) Rutgers Research Paper Series Paper No 070 1

⁴⁰ Such as the Geoscience Act 100 of 1993 (s24).

there is no clear regulatory approach to ownership in employee-inventions. The question: 'Who owns a patentable invention made by an employed inventor in South Africa?' cannot be answered definitively and without considerable qualification.

The reality of the challenges posed by the employee-invention paradigm is evident from the number of countries which have introduced deviations from the standard paradigm. South Africa is not immune to the potential shortcomings of relying on a regulatory framework which does not take the contributions of both corporate investors and employee-inventors into account. Although there has not been significant litigation in this area, the issue of employees and intellectual property ownership has not gone unnoticed.⁴¹ This is most notably evidenced by the interest generated in the media by the *Makate v Vodacom* matter in 2014, and again in 2015.⁴²

The relevance of this thesis lies in the contribution it makes to the limited South African jurisprudence on how ownership in patentable inventions made by employees ought to be allocated. It presents an exposition of the patent and labour considerations that must play a role in the allocation of first ownership in patentable inventions generated in the employment context in South Africa; a detailed analysis of the South African position; and recommendations for future legislative amendment. Of particular note is the consideration of labour law as a policy consideration to be taken into account when determining whether ownership of employee-inventions aligns with the purpose of patents. To date, there is no current academic contribution which addresses the issue of ownership in patentable employee-inventions in South Africa in a similar way.

As explained, this thesis approaches the research question from the assumption that the role of patents is to incentivise inventive activity. To this end the construction of a theoretical framework in Chapter 2, with its specific conceptualisation of the

⁴¹ An example is a seminar, 'Labour Law and Intellectual Property – Should the fruits be shared differently?' hosted by the University of Johannesburg's Faculty of Law and Centre for International and Comparative Labour and Social Security Law ('CICLASS') 3 March 2014.

⁴² *Makate v Vodacom* case no 08/20980 1 July 2014; *Makate v Vodacom (Pty) Ltd* 2014 (1) SA 191 (GSJ). The matter has since gone to the Constitutional Court.

incentive function of the rights to the patent and to attribution, offers an original vehicle through which to engage with employee-inventions in the South African context. In addition to the overall contribution, individual chapters – notably Chapters 3 and 4 engage with – employee-intellectual property claims in the South African system to a degree not previously undertaken in scholarly journals.

1.8 METHODOLOGY

The research objectives are met through a desktop, literature-based study. No empirical research has been undertaken. There are five aspects to the approach adopted to meet the research aims and objectives.

Firstly, a theoretical framework for the analysis was developed. There is no single way in which to approach the issue of ownership in employee-inventions. There is also no international guidance and consequently, the framework is developed in light of a number of assumptions as to the purpose of the patent system and how to construe it as an incentive mechanism. This formed the basis for constructing an employee-invention paradigm through which to consider the suitability of the South African approach to regulate patentable employee-inventions. In the absence of an international approach and specific and dedicated scholarly writing, it must be borne in mind that the literature which informs this section usually reflects a national perspective.

Secondly, the South African approach to entitlement to patentable employee-inventions is analysed against the backdrop of the general employee-invention paradigm. This entailed an explanation of the national patent and labour contexts, followed by an analysis, primarily of reported decisions dealing specifically with ownership in employee-made, patentable inventions, academic opinion, and patent legislation, to understand how first ownership in patentable employee-inventions is determined. This analysis provided a basis on which to draw conclusions about its efficacy in giving effect to the individual incentive function of patents.

Thirdly, in order further to understand the South African regulatory context, an analysis of other South African statutory intellectual property rights was undertaken along with an examination of the approach to patents adopted in the context of publicly-funded research.

Fourthly, a comparative analysis of two foreign jurisdictions – the United Kingdom (UK) and the United States of America (USA) was undertaken. The inevitable differences in economic status, historical development of both labour and patent laws, and national priorities between these countries and South Africa, require that the comparison be circumscribed if it is to be relevant. The examination of these jurisdictions is not intended to transplant either of them *in toto* into South Africa as alternatives to the current South African approach.

These countries, like other systems, are examples of the diverse national responses to the possible disjuncture in the employee-invention context between the grant of a patent to the inventor, and its role as an incentive to encourage further inventive activity. The UK introduced specific statutory provisions into its patent law, whereas the USA, at federal level, has not. The purpose here is to examine each system to ascertain whether they offer viable models for South Africa. However, the analysis is limited to reviewing their regulatory approaches to ownership in patentable inventions made in the employment context, and does not purport to be a comprehensive review of either system as a whole. The reason for selecting the UK and the USA draws on past relationships and current influence.

The British system was selected because of the historical and continuing influence of the system on the development of South African law. Even though South Africa does not follow British law, our patent and employment laws have their roots in Britain. The link between the British and South African patent laws is particularly strong because of the way in which early South African patent laws virtually mirrored early British legislation.⁴³ The current South African patents legislation, the PA 1978, drafted with the PCT in mind, is formulated in much the same terms as the British Patents Act ('BPA 1977') which, in turn, was drafted in light of the European Patent

⁴³ See further Chapter 3.

Convention ('EPC').⁴⁴ As a result of this at times parallel, statutory development, there is a long history of South African courts referring to English case law. However, close as the historical development has been, the South African system is in no way bound by British developments and this has indeed been the view of the courts from the earliest South African patent cases.⁴⁵ Interestingly, in relation to employee-inventions, the British approach has been to introduce detailed statutory provisions to regulate ownership and to make provision for statutory compensation for employee-inventors. South Africa has not followed suit. The examination of the British system will provide a basis for determining whether a similar statutory system would meet our needs, as well as identify shortcomings associated with such a statutory model.

The USA was, like South Africa, influenced by British rule and generally follows a common-law tradition. The system has, however, developed quite independently of the British system. Although the USA has had less direct influence on the development of South African patent laws than the British approach, its influence is present in both legislative developments and judicial decision-making. An early example of the former is the adoption in the South African Patents, Designs, Trademarks, and Copyright Act of 1916 ('PDTCA 1916') of the meaning of 'inventor' derived from USA law.⁴⁶ In addition, it has been noted that the definition of 'invention' under the SA Patents Act of 1952 was 'much more akin to that of the United States of America and Canada than to that of England'.⁴⁷ More recently, the USA legislation on federally-funded intellectual property – specifically the Bayh-Dole Act⁴⁸ – has played an influential role in the development of the South African IPPFRD Act. Although there is significant litigation in relation to employee-inventions in the USA, the government has refrained from introducing statutory ownership rules at federal level. Ownership of employee-inventions is generally left to be resolved by state

⁴⁴ Van der Merwe A 'The Law of Patents' in van der Merwe A (ed) *Law of Intellectual Property in South Africa* (2011) 269.

⁴⁵ See further Steyn J 'Proprietary rights in inventive ideas' (1953) 70 *SALJ* 269; Gertholtz R *Principles of South African Patent Law* (1971) 11.

⁴⁶ Act 9 of 1916.

⁴⁷ Steyn (n45) 269.

⁴⁸ Patent and Trademark Law Amendments Act, 1980.

common law. The approach at federal level is much like the South African approach, although, as discussed later, the common-law rules that have developed are very different.⁴⁹ Consequently, the types of common-law developments expose gaps in the non-statutory system which have required intervention, and as such, point to the possibility of similar gaps in the South African system.

The fifth aspect of the methodological approach is a synthesis of the preceding research. A number of conclusions are drawn from each chapter. From these conclusions, recommendations for an amendment to the PA 1978 which will introduce a statutory framework for the allocation of ownership of employee-inventions, are made.

1.9 RESEARCH IN ITS REGULATORY CONTEXT

South Africa's membership of international intellectual property law and labour organisations, such as the World Trade Organisation ('WTO'), World Intellectual Property Organisation ('WIPO'), and the International Labour Organisation ('ILO'), imposes obligations which it is bound to respect in its development of laws in these areas. However, there are no specific imperatives relating to ownership of employee-inventions at international level which need to be considered.

At national level, the South African enabling patent legislation, the PA 1978, does not distinguish employee-inventions in its entitlement provisions. Its only reference to employee-inventions relates to limitations on contracts in that context. In contrast, the IPPFRD Act, which deals with intellectual property derived from public finance, is specifically concerned with the allocation of ownership. However, it does not deal separately with the employment context.⁵⁰ In relation to other intellectual property rights – specifically copyright, registered designs, and plant breeders' rights – the respective enabling statutes make provision, in varying degrees, for the determination of ownership in the intellectual property between employers and employees. While each of these refers to 'employment', none of them provides

⁴⁹ See Chapter 5.

⁵⁰ See Chapter 3.

guidance as to what it meant by employment and related concepts in the context of the specific provision.

None of the statutes regulating general aspects of collective and individual labour laws deals with entitlement to intellectual property made by employees in the private sector.⁵¹ The effect of the common law on the allocation will depend on the terms of any contract between the parties, and on whether a rule relating to employee-inventions can be implied.⁵²

Finally, although there is no specific constitutional imperative relating to employee-inventions, the development of a regulatory framework must take the constitutional context into account.⁵³ The rights relating to labour relations in section 23 of the Constitution of the Republic of South Africa, 1996 ('the Constitution'), and in particular section 23(2) which provides for the right to fair labour practices;⁵⁴ the rights to freedom of trade, occupation and profession;⁵⁵ and the right to property,⁵⁶ underlie the development of labour and intellectual property laws. Furthermore, in so far as it may be necessary to resort to the common law, section 8 of the Constitution which provides that when a court applies the Bill of Rights, 'it must apply, or if necessary, develop the common law to the extent that legislation does not give effect to that right'.⁵⁷

1.10 LITERATURE REVIEW

The research objectives are met through a desktop, literature-based study that relies on an array of sources of law, including: South African primary legal sources; legislation and case law from the USA and UK; international instruments; secondary

⁵¹ See Chapter 3.

⁵² Ibid.

⁵³ Constitution s2, Chapter 2.

⁵⁴ Constitution s23(1).

⁵⁵ Constitution s22.

⁵⁶ Constitution s25.

⁵⁷ Constitution s8(3).

sources such as journal articles, books, and published theses; and official documents and reports.

As regards South African law, there is a dearth of case law on the ownership of employee-made intellectual property in general, and very few reported cases dealing specifically with ownership of patentable employee-inventions, none of which, it appears, provide a clear elucidation of the issue.⁵⁸ While employees, and more specifically ex-employees, do feature in many unlawful competition matters, these are predominantly in the area of the validity of restraint of trade agreements and the misappropriation of confidential information, neither of which falls within the scope of this research.⁵⁹

There are also few secondary-source contributions on the South African position. Those that are available include textbook entries, academic articles, short commentaries, and published student theses at LLM level.⁶⁰ None offers a complete treatment of the subject. The most comprehensive contribution appears in Timothy Burrell's *Burrell's South African Patent and Design Law* which was last updated in 1999.⁶¹

Outside of South Africa, there is a wealth of jurisdiction-specific literature on the issue of employee-inventions. In relation to the UK and the USA – the two foreign jurisdictions considered in this thesis – there is substantially more scholarly work on the subject than in South Africa. Among the authors who have directed their attention to this topic are Jeremy Phillips, Ann Monotti, Robert Merges, Justine Pila, Susanna Wolk, Catherine Fisk, and Mark Lemley. Recent works such *Business Innovation and the Law - Perspectives from Intellectual Property, Labour, Competition and Corporate Law* edited by Pittard, Monotti and Duns,⁶² and *Managing the Legal Nexus Between Intellectual Property and Employees* edited by

⁵⁸ See further Chapter 3.

⁵⁹ See 1.6 Scope of the Research.

⁶⁰ See Chapter 3 for details of the sources specific to South Africa.

⁶¹ Burrell T *South African Patent and Design Law* (1999) 293-5.

⁶² Pittard M, Monotti A & Duns J *Business Innovation and the Law - Perspectives from Intellectual Property, Labour, Competition and Corporate Law* (2013).

Oswald and Pagnatarro,⁶³ are testament to the current relevance of the issues raised by the intersection of employment and intellectual property.

The international instruments are silent on the issue of employee-inventions, although the issue has in the past been raised in fora like the WIPO and the ILO.⁶⁴

1.11 A NOTE ON DATES

The research for this thesis ends at 31 December 2015.

⁶³ Oswald J & Pagnatarro L (eds) *Managing the Legal Nexus Between Intellectual Property and Employee Domestic and Global Contexts* (2015).

⁶⁴ See further Chapter 2.

CHAPTER 2

A FRAMEWORK FOR UNDERSTANDING OWNERSHIP OF EMPLOYEE-INVENTIONS

2.1 INTRODUCTION

The question underlying this research is: How ought South Africa to regulate the allocation of first ownership in privately-funded patentable inventions between employers and employee-inventors so that it aligns with purpose of the patent system?¹

As explained in Chapter 1, there are myriad ways to engage with the issues raised by the ownership of employee-inventions. This chapter provides the framework for conceptualising the research question. This framework is built on a series of assumptions about the purpose of patents, the circumstances surrounding inventorship by employees, and the conceptualisation of patents as individual incentives. It is developed in four stages. It starts with the assumptions that this thesis makes as to the purpose of the patent system as a driver of innovation and the operation of patents as individual incentives to encourage inventive activity.

Stage 2 is a snapshot of how the system is currently constructed. It captures the fundamental characteristics of the system as promoted by the Paris Convention and the TRIPS Agreement, and focuses on how rights are allocated when inventions are made during the subsistence of an employment relationship.

The third stage is a response to the disjuncture between the default allocation in favour of the individual inventor, and the prevalence of patent ownership by firms. The response takes the form of an 'employee-invention paradigm'; a reflection of the context in which the patent system commonly operates and which arises as a

¹ See para 1.3.

consequence of the involvement of labour laws in the allocation of patentable inventions, the particular characteristics of firm-based inventive activity, and the suitability of the archetypal approach to allocation as an incentive mechanism in the employment context.

The final stage considers the incentive effect of particular allocation rules in the employee-invention context. This is based on assumptions about the incentive effect that a particular allocation of rights will have on employers' and employees' willingness to engage in inventive activity. It is this conceptualisation of the patent system as an optimal individual incentive mechanism for employers and employees that must inform the conclusions about the fitness of the South African system eventually in Chapter 6.

2.2 STAGE 1: THE PURPOSE OF PATENTS

2.2.1 Introduction

This thesis operates on the premise that the patent system contributes towards economic growth by acting as an incentive mechanism to encourage inventive activity which, in turn, is a driver for technological innovation. While there is nothing novel or even incongruous about this interconnection of intellectual property rights, economic growth, and innovation, it manifests in complex relationships which form the bases for an increasingly labyrinthine body of scholarly research and comment. The engagement reveals scepticism as to the association of innovation with increased economic growth, and criticism of the assertion that patents stimulate innovation.

The latter questions the lack of empirical evidence to support the assertion that patents encourage innovation,² the costs of implementing and maintaining a patent

² See discussions in Dutfield G & Suthersanen U 'Innovation and development' in Suthersanen U, Dutfield G & Boey Chow K *Innovation Without Patents* (2007) 1; Suthersanen U & Dutfield G 'Innovation and the law of intellectual property' in Suthersanen, Dutfield & Boey Chow id 16; Boldrin M & Levine D 'The case against patents' (2013) 1 *Journal of Economic Perspectives* 3.

system, the wastage of simultaneous invention, the anti-commons effect of patents, and the creation of patent thickets which potential innovators must negotiate.³ There is also the uncertainty as to whether the scope and breadth of patents are correctly calibrated for a balanced system,⁴ and whether patents incentivise the creation of inventions that would not otherwise have been made.⁵ This thesis does not attempt to resolve these issues, but proceeds on the basis that the system functions to encourage inventive activity provided that the allocation of ownership recognises the correct person.

2.2.2 Assumptions as to the Relationship between Innovation and the Incentive function of Patents

Dutfield and Suthersanem observe that '[t]he current conventional wisdom is that the world's most successful nations are those best at producing, acquiring, deploying and controlling valuable knowledge',⁶ and further that '[k]nowledge, especially new knowledge unavailable to one's rivals is key to international competitiveness and therefore to national prosperity. However, clichéd such a view may be, the fact is that many policymakers believe it to be true and are acting accordingly'.⁷ Goods which are knowledge-intensive are generally able to command a higher price in international markets.⁸ As a result of globalisation, the capacity to produce such goods has become an international benchmark for economic advancement. This association of knowledge-goods with economic growth drives the global narrative

³ See for example Suthersanen (n2) 16; Straus J 'Is there a global warming of patents?' (2001) 11 *Journal of World Intellectual Property Law* 58; Lerner J 'The patent system in a time of turmoil' (2010) 2(1) *WIPO Journal* 33-5; Dutfield G & Suthersanen U 'The innovation dilemma: Intellectual property and the historical legacy of cumulative creativity (2004) 4 *IPQ* 380.

⁴ Landes W & Posner R *The Economic Structure of Intellectual Property Law* (2003) 310-26.

⁵ See Andersen B 'If "intellectual property rights" is the answer, what is the question? Revisiting the patent controversies' in Andersen B (ed) *Intellectual property rights: Innovation, governance and the institutional environment* (2006) 117-127 for an overview of the literature on the conceptualisation of patents as incentives and the criticisms.

⁶ Dutfield G & Suthersanen U *Global Intellectual Property Law* (2008) 7.

⁷ Ibid.

⁸ Dutfield G & Suthersanen U 'Innovation and development' (n2) 6; Andersen (n5) 110 that knowledge assets are define the modern economy.

that technological progress is necessary for nations' development goals.⁹ The result is that countries have been drawn into an ecosystem which uses technological advancement as an indicator of competitiveness and economic success, with developing countries, in particular, under pressure to invest in a knowledge-based economy if they wish to advance economically.¹⁰

Technological progress, in turn, is commonly associated with innovation. Although this association is familiar, the term 'innovation' may be used in a number of ways and takes its meaning from the purpose to which it is put. A transposition of one definition to a different context without qualification would inevitably promote confusion.¹¹ Although this thesis is not concerned with interrogating the expansive discourse on theories of innovation, it does demand that assumptions about the nature of innovation and its relationship to patents, be made.

The term 'innovation' is used generally to refer to the introduction of different and new products and practices which advance technology. More particularly, innovation must be understood as a process directed towards the conceptualisation, development, and application of the new technology. As such, it resonates with the approaches in international fora and literature which view technological innovation as

⁹ See Czarnitzki D, Hall B & Oriani R 'Market valuation of US and European intellectual property' in Bosworth D & Webster E (eds) *The Management of Intellectual Property* (2006) 111.

¹⁰ See further Ostergard R 'Economic growth and intellectual property rights protection: A reassessment of the conventional wisdom' in Gervais D *Intellectual Property, Trade and Development* (2007) 158; Gervais D '(Re)implementing the Agreement on Trade-related Aspects of Intellectual Property Rights to foster innovation' (2009) 12 *Journal of World Intellectual Property* 359-65; Mengistie G 'The patent system in Africa: its contribution and potential in stimulating innovation, technology transfer and fostering science and technology: Part 2' (2010) 16 *International Trade Law & Regulation* 175; also Grandstrand O 'Intellectual property rights for governance in and of innovation systems' in Andersen B (ed) *Intellectual property rights: Innovation, governance and the institutional environment* (2006) 325-6 for a brief overview of the 'track record' of the patent system in promoting national innovation.

¹¹ The Organisation for Economic Co-operation and Development ('OECD'), acknowledges the necessity for a definition of innovation precisely to overcome the 'complexity of the innovation process and the variations in the way innovation occurs in firms'. See OECD *OSLO Manual Guidelines for Collecting and Interpreting Innovation Data* 3ed (2005) ('OSLO Manual') 46; Jensen P & Palangkaraya A 'Innovation scoreboards: An Australian perspective' in Bosworth & Webster (n9) 159.

a process which can be traced from research and development ('R&D'), to the production and implementation of new products or processes.¹²

This approach aligns with the OECD's broad definition adopted in its 'OSLO Manual' as 'the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations'.¹³ The OECD's approach may be narrowed to distinguish between four types of innovation in which firms may engage: product, process, organisational, and marketing innovation. The first two resonate with this thesis which approaches innovation as technological innovation.¹⁴ Product innovations are described as involving 'significant changes in the capabilities of goods or services. Both entirely new goods and services and significant improvements to existing products are included', while process innovations are those which 'represent significant changes in production and delivery methods'.¹⁵

The key element in each of these approaches is that of change brought about by newness or difference. The 'OSLO Manual' expressly states that the 'minimum requirement for innovation is that the product, process ... must be *new (or significantly improved) to the firm*'.¹⁶ Since innovation is characterised by change, new ideas for the development of novel and different products and methods are integral to the innovation process. These ideas may constitute the basis for protectable intellectual property, including patentable inventions. The decision to apply for patent protection depends on the patent's usefulness to the particular firm's innovation strategy – for example, providing protection from competitors during the commercialisation stage of the invention. The grant of a patent is not of itself indicative of a successful innovation, but may be one mechanism in the innovation process.

¹² See, for example, Jensen & Palangkaraya (n11) 61.

¹³ OECD (n11) 46.

¹⁴ The second edition of the *OSLO Manual* (1999) only included product and process innovations and regarded them as technological innovations.

¹⁵ OECD (n11) 16.

¹⁶ *Id* 46.

Although patents do not feature in every innovative process, a consequence of their use to protect new ideas in these circumstances is that statistics on patenting are regarded as indicative of innovative activity generally. The most simplistic association is that an increase in patenting indicates an increase in innovation.¹⁷ This use of patent statistics as a proxy for innovation at both national and firm level, has many shortcomings.¹⁸ For one, patents only capture activity of a particular kind: inventive activities which culminate in patentability criteria.¹⁹ Nations which are in fact innovative, but where patenting is low because of factors like the nature of their industries' or firms' reluctance to patent, will not fare well on an innovation index linked to the number of patents granted.²⁰ Similarly, at firm level a decision not to patent may adversely affect a firm's ranking. There are also deficiencies in the information that can be extracted – for example patents do not readily reflect the degree of innovative contribution of the invention.²¹

Unlike other indicators, like R&D expenditure and human capital, patent statistics are an accessible source of data.²² Consequently, the use of patent data remains a popular tool for *ex post facto* analyses of firms' innovative capacity.²³ However, the

¹⁷ See Sanders A 'Intellectual property treaties and development' in Gervais (n10)166.

¹⁸ See, for example, Sanders (n17) 167; Giuri P et al 'Inventors and invention processes in Europe: Results from the Pat Val-EU survey' (2007) 36 *Research Policy* 1108; Bernstein S 'Does going public affect innovation?' (2012) <http://ssrn.com/abstract=2061441> 6. (viewed 30 November 2015).

¹⁹ See Jensen & Palangkaraya (n11) 159-60, 162.

²⁰ Id 162.

²¹ Ostergard (n10) 147.

²² Giuri (n18) 1108.

²³ The diversity in the use of patent citation data is reflected in the following examples: Harrison E *Intellectual Property Rights, Innovation and Software Technologies* (2008) 140 who uses patent records of software-related patents in the USA to 'portray the structure of ownership of software' 141; Bernstein (n18) who found that there was 'a significant link between public ownership and innovation: going public causes a substantial decline of approximately 40% in innovation novelty as measured by patent citations' but that there was at the same time 'no change in the scale of innovation, as measured by the number of patents'. Miguelez E & Fink C 'Measuring the international mobility of inventors: A new database' WIPO Economics and Statistics Series 2013 Working Paper No.8, map migratory patterns of inventors from information on inventor nationality and residences in PCT applications; and Breschi S, Cassi L & Maerba F 'The exploration of knowledge networks through patent citations' in Andersen B (ed) *Intellectual property rights: Innovation, governance and the*

purpose of the patent system is not *ex post facto* benchmarking, but rather the *ex ante* role it plays in facilitating innovation. Aggregate measures of innovation are used to indicate countries' positions in the innovation race. According to Gervais, the development of innovative capacity at the country level follows a path where 'first a country imitates foreign technology (the *imitation* phase, which itself requires some technical skills); then it modifies the foreign technology to suit domestic needs and markets (the *local innovation* phase); then it produces innovations (whether new products or processes or improvements of existing ones) which are globally competitive (the *global innovation* phase)'.²⁴ Various factors will affect a country's progress along this innovation spectrum, one of which is investment in R&D.²⁵ The actual R&D takes place at the firm level, the results of which are captured in national innovation rankings.²⁶

Private firms will usually only invest in innovative activities as part of a strategy to out-perform market rivals. Where innovation is part of the business model of a particular corporation, the cost of directing resources to this end must be offset by the return on the investment. If the risk is too high, firms will not direct resources to this end.²⁷ Governments adopt a variety of strategies to encourage private-sector investment in innovation, for example tax incentives, prizes,²⁸ and supportive regulatory and legal frameworks.²⁹ These may form part of national systems of innovation designed to generate, disseminate, and exploit innovation to the benefit of

institutional environment (2006) 278 explore their role as relational data in semiconductor and computer industries.

²⁴ Gervais D 'TRIPS and development' in Gervais (n10) 46.

²⁵ *Id* 45-6; 55-6.

²⁶ Jensen & Palangkaraya (n11) 159.

²⁷ Lerner (n3) 29; Dratler J 'Fixing our Broken Patent System' (2010) 14 *Marquette Intellectual Property Law Review* 51

²⁸ See further Jaffe A & Lerner J *Innovation and its Discontents* (2004) 39.

²⁹ See further Lerner (n3) 29-31; Grandstrand (n10) 312.

the domestic economy.³⁰ The patent system may be regarded as one such strategic device directed towards increasing innovation.³¹

Patent ownership offers patentees the opportunity to exclude others from exploiting the new technology and by so doing gain a competitive advantage over market rivals.³² In the absence of such exclusivity, the ease with which others could copy an invention negates any competitive benefit and discourages the effort and investment to invent anew. As such, the protective shield it offers serves as an incentive for the development of fresh inventive activity.³³

This thesis asks whether the rules which determine patent ownership support the functioning of patent ownership as an ‘incentivisation mechanism’ encouraging the generation of new ideas at firm level. My assumption is that if the grant of a patent is to serve as an incentive for the production of a patentable invention, the rights associated with the patent must be allocated in a way that will encourage more of the same type of inventive effort not only by the contributors to the particular invention, but also by observers. Therefore, I do not conceptualise the incentive function as the *reason for* patents, but hold rather that the incentive value of a patent lies in its role in reducing reluctance by contributors to expend the necessary effort to invent further.³⁴ My assumption is that the optimal patent-allocation rule has the least discouraging effect on the probability of those whose input is a *sine qua non* for the

³⁰ Dutfield & Suthersanen (n8) 9.

³¹ See, for example, Gervais (n24) 4; Straus (n3) 58; Lerner (n3) 29 Grandstrand (n10) 325. The theoretical justifications which support a system of state-granted monopolies are explained in Chapter 1.

³² See Davis L ‘Why do small high-tech firms take out patents, and why not?’ in Andersen B (ed) *Intellectual property rights: Innovation, governance and the institutional environment* (2006) 151-154.

³³ Suthersanen (n2) 14.

³⁴ On the concerns of the inducement effect of patents and the view that incentives must function at the individual level as well as the firm level, see further Van Caenegem W ‘Pervasive incentives, disparate innovation and intellectual property law in in Arup C & Caenegem W *Intellectual Property Policy Reform* (2009) 250ff and esp 257-262; Dent C ‘An exploration of the principles, precepts and purposes that provide structure to the patent system’ (2008) 4 *IPQ* 461-6, 472.

invention making a further contribution of the same type. This means that the incentive must reach the correct person.

The next step in constructing the theoretical framework is to provide an exposition of the current patent system as framed by this conceptualisation of the incentive function.

2.3 STAGE 2: THE CURRENT PATENT PARADIGM

2.3.1 General

This stage provides a snapshot of the current and archetypical approaches to the allocation of patent rights. It will be recalled that the conceptualisation of the incentive function sees patent rights as incentives for contributors to make the necessary effort to develop a patentable invention. The benefits of the patent must be directed to the proper person if that person is not to be dissuaded from contributing to the process. The focus now turns to understanding the nature of the current system and how benefits associated with the grant of a patent, namely the economic and attribution rights are allocated between employers and employees engaged in patentable inventive activity. This part of the chapter therefore provides a basis for reflection on how the current system aligns with the purpose set out above.

2.3.2 The Nature of the ‘International’ Patent System

Patents operate territorially. Although an increasingly globalised economy has seen multinational corporations emerge as the dominant users of patents,³⁵ there is no global patent system which provides for the registration of a worldwide patent. Although patent laws vary from country to country, there are fundamental similarities across national patent systems which arise as a consequence of a common commitment to international regulatory instruments, particularly the Paris Convention and the TRIPS Agreement. It is submitted that the substantive and procedural terms of these two instruments are the closest approximation to an ‘international’ patent

³⁵ See further Spinello R & Bottis M *A Defense of Intellectual Property Rights* (2009) 51.

system.³⁶ This international patent system constitutes the archetypal patent paradigm which informs the theoretical framework in this chapter.

Although the Paris Convention and the TRIPS Agreement underpin the imperative to implement patent protection for inventions, national interests determine patent practices at local level and are responsible for the past and continued development of these international instruments.³⁷ Both the Paris Convention and the TRIPS Agreement arose out of national initiatives ultimately fuelled by corporate economic interest in accessing foreign markets. However, while the Paris Convention can claim title as the first international intellectual property instrument which dealt with patents, the system of patents generally cannot be ascribed to a single historical account. Historically, various forms of protection for inventive activity have featured in national legal systems,³⁸ for example, the first letters patent can be traced to the city of Florence, and the first written patent law to the state of Venice in 1474.³⁹ The early Venetian patents were limited monopolies awarded to individuals and were used to advance the importation of knowledge as a way of advancing the competitiveness of specific geographical entities in the international market.⁴⁰

For countries with a common-law legal tradition, the development of patent laws is influenced by the British patent laws.⁴¹ It was the practice of the Crown in the Middle Ages to grant letters of protection to those who imported new industries into

³⁶ There are other international instruments which serve to facilitate more efficient ways to apply for patents in multiple jurisdictions – for example the PCT – however these are arguably limited in informing the substantive content.

³⁷ See Yu P ‘Political privilege, legal right, or public policy tool? A history of the patent system’ (2009) ATRIP 38.

³⁸ Spinello & Bottis (n35) 15; Sherman B ‘Towards a history of patent law’ in Takenaka T (ed) *Intellectual Property in Common Law and Civil Law* (2013) 14.

³⁹ See Dutfield & Suthersanen (n6)106.

⁴⁰ See further Neppel C et al ‘The future of IP in Europe’ in Shimanami R *The Future of the Patent System* (2012) 97; for more on the historical development of the patent system in Venice, see Yu (n37) 8-16; Grandstrand (n10) 313-4.

⁴¹ For more on the historical development of the British patent system, and in particular how historical accounts have shaped the system, see Sherman (n38) 6-15.

England,⁴² who were in specific trades, and who had actually invented something.⁴³ The purpose, at least initially, was to enhance local technological capacity by attracting those who were able to introduce new technologies to England.⁴⁴ These were acceptable monopolies because, as explained by Suthersanen, 'the prevailing mercantilist ethos of the time accepted the principle that a system of exclusive privileges would nurture innovative activity which would, in turn, promote the economic well-being of the country. The mercantilist regarded the state as the appropriate instrument for promoting the well-being of his country; in his view the country was regarded as a unit of national interests, irrespective of the interests of individuals'.⁴⁵

However, the tendency of granting these privileges to Crown favourites resulted in litigation over letters patent issued for playing-cards to a non-inventor. The result of *Darcy v Allein*⁴⁶ was the introduction of the Statute of Monopolies by the English parliament to prohibit Crown monopolies in commodities.⁴⁷ However, certain rights were reserved for inventors by allowing for letters patent for new inventions to be granted to the first-and-true inventor for a period of fourteen years. The justification for the retention of letters patent in these narrower circumstances came to be accepted on the basis that they were appropriate rewards.⁴⁸ Interestingly, the

⁴² For example John Kempe of Flanders was granted letters of protection to introduce the techniques of cloth weaving in 1331. For more on the development at this stage see Pila (n47) 210.

⁴³ Examples include letters patent for methods of draining water (1562), methods of making ovens (1563), and glassmaking (1567). See further Spinello & Bottis (n35) 35.

⁴⁴ Spinello & Bottis (n35) 35.

⁴⁵ Suthersanen (n2) 13.

⁴⁶ *Edward Darcy Esquire v Thomas Allin of London Haberdasher* (1599) 74 ER 1131, (1602) 77 Eng Rep 1260 and (1599) Nov 173.

⁴⁷ Statute of Monopolies 1623, 1623 Ch 3 21 Ja 1. See further Pila J: 'The common law invention in its original form' (2001) 3 *IPQ* 209 219-22. According to Sherman, the attribution of the start of the patent system to the Statute of Monopolies is a consequence of 'the official history being written for the first time' when 'for the most part the official history of intellectual property law that emerged in the second half of the nineteenth century was written evangelically; that is, it presumed that particular areas of law could be traced back to a single moment or event' Sherman B & Bently L *The Making of Modern Intellectual Property Law: The British Experience, 1860-1911* (1999) 206-7. See Gubby H *Developing a Legal Paradigm for Patents* (2012) 87-88.

⁴⁸ Suthersanen (n2) 13-14.

interpretation of the term 'first and true inventor' was not confined to the person who have exercised his or her inventive faculties but sustained an interpretation which included the importer of the technology.⁴⁹ The British patent laws are thus commonly traced to the 1624 Statute of Monopolies although the statute is more appropriately an anti-monopoly intervention, not a system of invention protection.⁵⁰

Although many countries had adopted domestic forms of protection for inventions, there was little harmonisation of approach or underlying philosophy until the rise of the industrial revolution. Development of the system in civilian jurisdictions, for example, was more readily justified on the basis that entitlement to patents for inventions was the natural right of inventors, as opposed to the more industry-centred British common-law approach.⁵¹

By the mid-nineteenth century a more consequentialist way of thinking about patents can be discerned,⁵² with a shift from more metaphysical questions to those focussed on the role of the patent system in industrial development. Van Caenegem's description of this mood bears repetition in full. He writes that the

industrial revolution progressively provided both the goods that the masses had come to aspire to acquire, the means (in income in salaries and wages) to acquire them, and the necessary institutions to organise their acquisitions, thus creating something of a self-perpetuating engine of growth ... It is not surprising that alongside innovations in administration, a notion of intellectual property arose and gained credence at such a time as an organisational instrument in a new market dependent on novelty, progress and constant change. It reflected both the new attitude to property, the notion of a reward of property rights for those who achieved more with less (for that is what successful new technologies must do, increase the productivity of labour and real inputs), and also an increasing belief in the unique contribution of the individual. It matched the crucial progressive notion that technological change or innovation would result in increased individual welfare.⁵³

⁴⁹ See Gubby Gubby (n47) 101-5.

⁵⁰ See further Dutfield & Suthersanen (n6) 106; Gubby (n47) 2-3

⁵¹ See further Spinello & Bottis (n35) 36; Bainbridge D *Intellectual Property* 9ed (2012) 18.

⁵² Sherman (n38) 14.

⁵³ Van Caenegem W 'Intellectual property and the idea of progress' (2003) 3 *IPQ* 243.

Although the British the patent system had come under severe criticism for its inefficiency – even with a call for its abolition in mid-Victorian times – as Coulter explains, it was settled by this stage that ‘patent protection, although nominally still a privilege granted by royal grace and favor, was the right of every inventor who could afford to secure it’.⁵⁴

The rise in industrialisation resulted in an increase in cross-border exchanges of information and goods, with governments under pressure to find ways to secure protection for their nationals’ inventions in foreign countries. This was one of the principal reasons for convening the Paris Convention. This Convention – currently administered by WIPO – was signed by eleven contracting states at a Diplomatic Conference in 1883, and was ratified in 1884.⁵⁵ It has since been revised several times, with the most recent formulation being the Stockholm version of 1967 as amended in 1979.⁵⁶ The number of parties has grown to 176.

The Paris Convention recognises patents as one of a number of mechanisms to protect industrial property.⁵⁷ The most far-reaching provisions are general provisions relating to the principle of national treatment⁵⁸ and rights of priority,⁵⁹ with the more patent-specific ones relating to compulsory licensing,⁶⁰ importation,⁶¹ and the independence of patents.⁶² Because the Paris Convention is not prescriptive as to implementation of the patent system, and in so far as it does prescribe rules,

⁵⁴ Coulter M *Property in Ideas: the Patent Question in mid-Victorian Britain* (1991) 167.

⁵⁵ See further Bodenhausen G *Guide to the Application of the Paris Convention for the Protection of Industrial Property* (1969) 9. See further Gubby (n47) 238-43.

⁵⁶ The Treaty was revised at Brussels, Belgium, on 14 December 1900, at Washington, United States, on 2 June 1911, at The Hague, Netherlands, on 6 November 1925, at London, United Kingdom, on 2 June 1934, at Lisbon, Portugal, on 31 October 1958, and at Stockholm, Sweden, on 14 July 1967, and was amended on 28 September 1979. See further <http://www.wipo.int/treaties/en/ip/paris/> (Date of use 30 November 2015.)

⁵⁷ Paris art 1(2).

⁵⁸ *Id* art 2.

⁵⁹ *Id* art 4.

⁶⁰ *Id* art 5A.

⁶¹ *Ibid*.

⁶² *Id* art 4*bis*.

Bodenhause n advises in the ‘Guide to the Convention’ published under the auspices of the WIPO, that ‘their scope is limited and they leave considerable freedom to the member States to legislate on questions of industrial property according to their interests and preferences’.⁶³ Thus decisions as to patentability criteria, examination requirements, whether patents should be granted for both products and processes, and indeed who should be entitled to the patent, are left to states to decide.⁶⁴ Interestingly, while the economic aspects are devoid of detail, the right of the inventor to be named is unequivocal. Article 4^{ter}, introduced in 1934, provides that ‘[t]he inventor shall have the right to be mentioned as such’.⁶⁵ This is the sole reference to this entitlement.⁶⁶

After the Paris Convention various instruments were introduced primarily to facilitate multi-jurisdiction patent filing. These include the PCT,⁶⁷ the Patent Law Treaty,⁶⁸ the Budapest Treaty,⁶⁹ and the Strasbourg Treaty.⁷⁰ Just over one hundred years after

⁶³ Bodenhause n (n55)15. However, see Kingston W ‘Why patents need reform, and some suggestions for it’ in Arup C & Caenegem W *Intellectual Property Policy Reform* (2009) 14-5 for how the US patentability criteria developed into the general standard and ‘recruitment’ strategy of the Secretariat of the Paris Convention to bring developing countries into the fold. This included the development of model laws aims at developing countries.

⁶⁴ Id 5.

⁶⁵ Article 4^{ter}. See Cornwell S ‘Employee rights in innovative works’ (1980) 119 *International Labour Review* 309; Dutfield G ‘Collective invention and patent law individualism, 1877-2012 – or, the curious persistence of the inventor’s moral right’ in Araposthathis S & Dutfield G *Knowledge Management and Intellectual Property* (2013) 115 for the history to this inclusion.

⁶⁶ It appears akin to the moral right of attribution which the Berne Convention (art 6^{bis}) recognises in respect of authors of copyright works.

⁶⁷ For details of the operation of the PCT, see www.wipo.int/pct/en/ (Date of use 30 November 2015.)

⁶⁸ Patent Law Treaty of 2000. See further www.wipo.int/treaties/en/ip/plt/ (Date of use 30 November 2015.)

⁶⁹ Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure of 1977 and amended 1980. See further details at www.wipo.int/treaties/en/registration/budapest/ (Date of use 30 November 2015.)

⁷⁰ Strasbourg Agreement Concerning the International Patent Classification of 1971 and amended 1979. See further details <http://www.wipo.int/treaties/en/classification/strasbourg/> (Date of use 30 November 2015.)

the ratification of the Paris Convention, intellectual property rights were indelibly linked to the global economic landscape by the TRIPS Agreement.

The TRIPS Agreement emerged in the late 1980s in the context of the Uruguay Round of multilateral trade negotiations of the General Agreement on Tariffs and Trade, in part as a response to the perceived failure of the existing international instruments – specifically the Paris and Berne Conventions – to ensure enforceable intellectual property protection.⁷¹ The TRIPS Agreement does not offer a completely novel understanding of intellectual property rights, but incorporates and adds to the substantive provisions of the earlier instruments.⁷² Although member states have a measure of flexibility in how they implement the provisions,⁷³ the effect of the Agreement is to impose a minimum threshold on the levels of protection that WTO members are obliged to implement. This, combined with its enforcement through the WTO Dispute Settlement Procedures, contributes to its being the dominant driver of intellectual property policy currently. Even so, it has been and continues to be vociferously criticised for a range of perceived failings ranging from the fairness of its negotiating history⁷⁴ to its harsh effect on developing countries,⁷⁵ and to its (un)suitability for new modes of innovation.

In relation to patents, the TRIPS Agreement incorporates the substantive articles of the Paris Convention and provides additional directions to members, most of which expand on the nature and scope of protection for inventions.⁷⁶ Unlike the Paris

⁷¹ On the historical development of TRIPS see UNCTAD-ICTSD *Resource Book on TRIPS and Development* (2005) 1-16.

⁷² TRIPS arts 2(1), 9(1).

⁷³ *Id* art1.

⁷⁴ See, for example, Yu P 'TRIPS and its discontents' (2005) 10 *Marquette Intellectual Property Law Review* 369 who discusses four narratives: the bargain narrative, coercion narrative, ignorance narrative, and self-interest; Gervais 2007 (n24) 5-12; Drahos P & Braithwaite J *Information Feudalism: Who Owns the Knowledge Economy?* (2002) 109-48.

⁷⁵ See Sanders (n17) 163; Chon M 'Substantive equality in international intellectual property norm setting and interpretation' in Gervais 2007 (n10) 476ff; Dutfield & Suthersanen (n6) 6-12; Gervais (n10) 348-350.

⁷⁶ TRIPS art2(1) provides that: 'Members shall comply with Articles 1 through 12, and Article 19, of the Paris Convention (1967)'.

Convention, the TRIPS Agreement specifically sets criteria for patentability. Inventions must be 'new, involve an inventive step and [be]...capable of industrial application'.⁷⁷ However, any narrowing of the pool of inventions which may result from the set criteria, must be considered against the widening of the pool by the prohibition on excluding broad types of subject matter. The TRIPS Agreement demands that 'patents shall be available for any inventions, whether products or processes, in all fields of technology',⁷⁸ but does allow countries a measure of discretion to exclude certain subject matter from patentability.⁷⁹

The TRIPS Agreement delineates the scope of the exclusivity which a patent affords the patentee.⁸⁰ A patented product may not be made, used, offered for sale, sold, or imported for such purposes without authorisation.⁸¹ The patentee of a patented process not only has the exclusive right to prevent unauthorised third-party use of the process, but may also prevent the acts of using, offering for sale, selling, or importing for such purposes, products obtained directly from that patented process.⁸² A patent may be assigned or licensed,⁸³ and endures for a period of at least twenty years from the date of filing for the patent.⁸⁴

The *quid pro quo* for this monopoly is found in the disclosure requirements necessary for the grant of the patent. The applicant for the patent must 'disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art'.⁸⁵ Article 29 provides further that it 'may' also be required that the applicant 'indicate the best mode for carrying out the invention known to the inventor' at the filing date or priority date of the application.

⁷⁷ Article 27(1). See UNCTAD-ICTSD n(71) 351-3, 358-361 on these requirements.

⁷⁸ Ibid.

⁷⁹ Article 27(3)(a), (b); (2).

⁸⁰ The patent rights may be limited by the introduction of exceptions and limitations, see TRIPS art 30 and Paris Convention art 5.

⁸¹ TRIPS art 28(2)(a).

⁸² Id art 28(1)(b).

⁸³ Id art 28(2). See also Bainbridge (n51) 363 on the scope of the patentee's rights.

⁸⁴ TRIPS art 33.

⁸⁵ Id art 29(1).

The inventor's right to be mentioned is one of the provisions of the Paris Convention which has been incorporated into the TRIPS Agreement. However, the Agreement does not elaborate any further on the nature and scope of this right.⁸⁶

2.3.3 Allocation of Patent Rights

2.3.3.1 Ownership and attribution

The benefits which arise as a consequence of a patent are twofold: economic and personal. Entitlement to these benefits depends on how ownership and attribution, respectively, are vested.⁸⁷

In so far as the patent or economic rights are concerned, neither the Paris Convention nor the TRIPS Agreement prescribes a first-ownership rule. Counterintuitive as it is, ownership is not expressly allocated to the inventor, even though inventorship has tended to be associated with ownership.⁸⁸ The Paris Convention's only reference to a potential legal subject is to '*[a]ny person* who had duly filed an application for a patent'⁸⁹ (italics added) in the context of the provisions relating to the right of priority.⁹⁰ According to Bodenhausen, ownership in patents is one of the issues to be decided at national level.⁹¹ The TRIPS Agreement simply

⁸⁶ Interestingly, the TRIPS Agreement expressly excludes art 6*bis* of the Berne Convention which provides an attribution right for the author, from the provisions it incorporates from that Convention.

⁸⁷ See Fromer J 'Expressive incentives in intellectual property' (2012) 98 *Virginia Law Review* 1745 for the argument that even in utilitarian-based theories, it is possible for personal rights like moral rights in copyright and attribution in patent law, to be conceptualised as incentives.

⁸⁸ See Takenaka T & Reboul Y 'Employee invention system: Comparative law perspective' in Takenaka (n38) 366. The WIPO Model Laws for Developing Countries on Inventions of 1965 and 1979 both suggest that countries adopt a rule that vests default ownership in the inventor. See BIRPI (WIPO) Model Law for Developing Countries on Inventions 1965 Geneva ('WIPO Model Law 1965') and; WIPO Model Law for Developing Countries on Inventions 1979 Vol 1 'Patents' Geneva ('WIPO Model Law 1979'); also WIPO Draft Model Provisions on Patentability, the Right to the Patent, the Rights under the Patent, Duration, and Compulsory Licences 24 February 1975.

⁸⁹ Paris art 4.

⁹⁰ This is the only occasion on which reference is made to a particular person.

⁹¹ Bodenhausen (n55).

states that '[a] patent shall confer on its *owner* the following exclusive rights' (italics added)⁹² and provides further that '*[p]atent owners* shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts' (italics added).⁹³ Reference is also made to the '*applicant* for a patent (italics added)' in article 29 which imposes disclosure requirements. The provision states that it is a requirement 'that an *applicant* for a patent shall disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by a person skilled in the art and may require the *applicant* to indicate the best mode for carrying out the invention known to the *inventor* at the filing date or, where priority is claimed, at the priority date of the application (italics added)'.⁹⁴ Article 4I refers to applicants for *inventor's* certificates.

Consequently, despite the references to possible legal subjects in the guise of 'applicant', 'owner', and 'inventor', there is no explicit linking of any specific person to default ownership of the patent. There are no definitions or criteria for status as an applicant, inventor or owner, nor are these categories expressly limited to juristic or natural persons. It is submitted that this failure to identify the first owner, indicates that the ownership is not linked to a particular person but rather to a desired outcome, namely the creation of an invention which meets patentability criteria. In other words, the fact that a particular contribution has been made does not of itself associate the contributor with ownership, rather it is the existence of the final product which is incentivised. As indicated above, this absence of guidance means that national laws determine first ownership. However, even in the absence of an express first-ownership allocation, the international instruments appear to endorse the inventor as the proper default first owner.⁹⁵

Article 29 of the TRIPS Agreement provides that in addition to the mandatory disclosure requirements by the 'applicant', member states may also 'require the applicant to indicate the best mode for carrying out the invention known to the

⁹² TRIPS art 28(1)(a).

⁹³ *Id* art 28(2).

⁹⁴ *Id* art 29(1).

⁹⁵ UNCTAD-ICTSD (n71) 353 for the view that a patent 'confers an exclusive right granted by the state to an inventor'.

inventor’.⁹⁶ Since the inventor is expressly recognised as the person with the knowledge of the best mode, it is implicit in article 29 that the applicant can only present an invention which was derived from the ‘inventor’. In the absence of the inventor disclosing the best mode to another person so allowing that person to apply, only the inventor would be able successfully to meet this requirement imposed on the applicant. Therefore, if the international system is interpreted on the basis of the incentive function, then in the absence of any other contributor it is the inventor’s contribution which the system acknowledges.⁹⁷

The second aspect of the incentive mechanism inherent in the grant of a patent is that of attribution or, more specifically, the right to be mentioned as the inventor.⁹⁸ It is clear that this entitlement vests in the inventor with inventorship as the basis on which allocation takes place. The incentive effect differs from that of the patent as the right to be mentioned does not attract exclusive economic rights – its value lies in the association with the invention. However, as Fromer suggests although the value of attribution is most readily found in personhood theory, it is possible to conceptualise ‘expressive incentives’ within the utilitarian framework.⁹⁹ The value of attribution as an incentive for the inventor lies in the reward it offers; for example the enhanced reputation of the inventor, which in turn could translate into increased employee-mobility and financial benefits.¹⁰⁰

Given the pivotal role played by the inventor in the allocation of ownership and the attribution right, it is essential to the incentive objective that we establish the nature of inventorship.

⁹⁶ Ibid.

⁹⁷ See (n88) above.

⁹⁸ See Fromer (n87) 1776 that ‘an optimized intellectual property system would likely contain some mix of pecuniary and expressive incentives’. See Dutfield (n65) questioning why this right ‘persists’.

⁹⁹ Fromer (n87) 1775-6. According to her, the personhood theory manifests in notions of self-expression, the belief that inventors are ‘creative geniuses’ who are also guided by functional considerations, the prestigious reputation associated with the invention, and the labour which has gone into the invention’.

¹⁰⁰ See further Fromer (n87) 1790. See also Fisk C ‘Credit where it’s due: The law and norms of attribution’ (2006) 95 *Georgetown Law Journal* 56-61; Dutfield (n65) 125.

2.3.3.2 The nature of inventorship

Neither the TRIPS Agreement nor the Paris Convention defines ‘inventor’ or clearly explains what inventorship entails. Where only one person is associated with all aspects of the generation of the invention, the identification of the inventor for the purposes of patent ownership and attribution is unproblematic – that person would be the inventor. It would be difficult to argue for recognition without some contribution to the invention.

However, where more than one person is involved, which is inevitably the case in the corporate innovation environment, each contributor is a potential contender for the title of ‘inventor’. In order to ensure that ownership and attribution reach the ‘inventor’, it must be possible to distinguish between inventors and non-inventor contributors. Each person who claims inventorship (or co-inventorship), must have made the required input or contribution for him or her to derive the benefits reserved for inventors under patent law. It is submitted that this entails two considerations: knowing what must have been made; and the nature of the contribution which must have been made.

The first consideration can be rephrased as: ‘What is the invention?’. It is submitted that the subject matter for which the patent will be granted must be an expression of what the system expects in exchange for the patent. The patent system only recognises certain types of technological advancement – specifically contrivances which meet certain requirements, the most relevant of which are newness and inventiveness. Newness, or novelty, is determined with reference to the state of the art at the time when the inventor stakes his or her claim to the invention. It is an objective assessment measured against what existed before the invention was made. Inventiveness is a less straightforward determination.¹⁰¹ It is generally established by reference to whether a person skilled in the art would find the idea obvious. In this case it is tested against the notional person skilled in the art when the application is made and requires a value judgement. In both cases, it is the final

¹⁰¹ Blair R & Cotter T *Intellectual Property Economic and Legal Dimensions of Rights and Remedies* (2005) 9.

intellectual embodiment of the underlying mental ingenuity which is tested for newness and inventiveness.

The approach to applying this test will determine the boundaries of the invention, and so also of the monopoly it grants. The complexity this raises is clear when one considers the question in two contexts: entitlement; and infringement proceedings. If the approach differs, that which constitutes the invention in an entitlement dispute will not necessarily coincide with the invention in an infringement matter, even though both enquiries involve a single contrivance.

Therefore, while the claims of the patent may be used to show the subject matter of the invention for the purposes of entitlement, this is not necessarily the case for infringement. In order to determine the scope of the patent monopoly in the latter context, the enquiry is not necessarily limited to the claims as they stand¹⁰² but may use various levels of abstraction to determine whether the alleged infringer's actions fall within the scope of patent.¹⁰³ This translates into a broader delineation of what constitutes the invention. Even within the entitlement enquiry there are variations, for example, whether the specifications ought to be considered along with the claims. A pure claims approach will narrow the basis of inventorship.¹⁰⁴

The second aspect of the inventorship enquiry involves the nature of the contribution to the invention claimed. This requires knowing what sort of effort will culminate in the invention. The actual process which leads to the invention depends on a host of context-specific factors, for example, the nature of the enterprise and the institutional environment. However, the process will inevitably require two types of input:

¹⁰² The doctrine of equivalents is one manifestation of this. See Fellmeth A 'Conception and misconception in joint inventorship' (2012) 2 *NYU Journal of Intellectual Property and Entertainment Law* 126-8; Chiang T 'The levels of abstraction problem in patent law' (2011) 105 *Northwestern University Law Review* 1097 for an analysis of how not considering the levels of abstraction affect patent scope (and thus also the appropriateness of the *quid pro quo* inherent in a patent award); also generally on inventorship disputes Abdussalam M 'Identifying "the invention" in inventorship disputes' (2014) 11 *Scripted* 43-4.

¹⁰³ Chiang (n102) 1097-98.

¹⁰⁴ See further Abdussalam (n102) 44-64.

resource and intellectual contribution. The resource contribution manifests in human resources, materials, facilities, and equipment. There is a financial cost associated with securing each component and this contribution is only available through financial investment. The intellectual contribution is not similarly quantifiable. It refers to the intangible mental effort required for the emergence of an idea and generally depends on individual human intellectual engagement.

The resource and intellectual contributions may, but need not, be made by a single contributor. Where they are, inventorship resides in that single contributor simply because there is no-one else to vie for the title of inventor. However, where the components derive from multiple contributors and are of different types, every contributor may also be an inventor. Whether or not the system recognises the contribution depends on the interpretation of 'inventor'.¹⁰⁵ This, it is submitted, is limited to the intellectual contribution as captured in the inventiveness and novelty criteria that qualify the invention as patent-worthy.¹⁰⁶ This is also implicit in the association of the inventor with the best-mode-of-delivery disclosure which demands an intimate knowledge of the working of the invention.¹⁰⁷ Furthermore, the international instruments make no reference to resource components or investment, directly or indirectly.¹⁰⁸

On this basis, a failure to contribute to the intellectual 'patent-worthy' concept renders a contributor a non-inventor, regardless of the significance of his or her contribution. It also means that if more than one person contributes the intellectual input, each is an inventor and entitled to the concomitant rights. This in turn raises further complexities, for example how to determine co-inventorship and its effect on co-ownership.¹⁰⁹ As I do not explore co-inventorship in this thesis, it is assumed that any rights flowing from inventorship apply equally to multiple inventors.¹¹⁰

¹⁰⁵ See Dratler (n27) 53.

¹⁰⁶ See Greive E 'The doctrine of inventorship: Its ramifications in patent law' (1965-66) 17 *Western Reserve Law Review* 1344.

¹⁰⁷ TRIPS art 29(1).

¹⁰⁸ See Dratler (n27) 51.

¹⁰⁹ See Monotti A & Ricketson S *Universities and Intellectual Property Ownership and Exploitation* (2003) 143; McManus J *Intellectual Property: From creation to commercialisation. A practical guide*

Where a corporate seeks title to the invention, the question arises as to whether inventorship can inhere in a juristic person. There is no indication that the international instruments exclude juristic persons from being inventors. However, the legislative history indicates that article 4~~ter~~ of the Paris Convention was a response to the concern that individual inventors were being de-linked from their inventions in the patent process which was increasingly firm-centred,¹¹¹ in other words, the ‘corporatisation’ of the system. Dutfield notes that its inclusion was the outcome of ‘an extensive discussion held by a conference subcommittee not only on a proposed moral right equivalent to the right of attribution in copyright law, but also on employee inventions and a possible right of remuneration. Indeed, the moral rights of inventors was hardly the most ambitious proposal’.¹¹²

Therefore, historically at least, the individual making the invention was the central concern.

While natural persons may undoubtedly qualify as inventors through the association of inventorship with intellectual contribution, it is not that clear that juristic persons

for innovators and researchers (2012) 124; *University of Southampton Applications* [2005] RPC 11 par [220]. For more on the effects of co-ownership of patents arising out of joint inventorship, in particular the approach in the US, see Merges R & Locke ‘Co-ownership of patents: A comparative and economic view’ (1990) 72 *Journal of Patent and Trademark Office Society* 586. The complexity is captured in the oft-quoted comment by Judge Newcomer in *Mueller Brass Co v Reading Industries* that co-inventorship ‘is one of the muddiest concepts in the muddy metaphysics of patent law. One the one hand, it is reasonably clear that a person who has merely followed the instructions of another in performing experiments is not a co-inventor of the object to which those experiments are directed. To claim inventorship is to claim at least some role in the final conception of that which is sought to be patented. Perhaps one need not be able to point to a specific component as one’s sole idea, but one must be able to say that without his contribution to the final conception, it would have been less – less efficient, less simple, less economical, less something of benefit’ (352 F Supp 1357, 1372 (ED Pa 1972)).

¹¹⁰ See, for example, the differences in co-ownership in the British and US approaches.

¹¹¹ Heath states that ‘there is no doubt that the Paris Convention was meant to strengthen the rights of inventors, the text of Article 4 only mentions the inventor’s right to be named as such’, Heath C ‘Harmonizing scope and allocation of patent rights in Europe – Towards a new European patent law’ (2002) *Marquette Intellectual Property Law Review* 26.

¹¹² Dutfield G ‘Collective invention and patent law individualism: Origins and functions of the inventor’s right of attribution’ (2013) 5 *WIPOJ* 31; Dutfield (n65) 115-117 on the historical development of this provision.

could not also claim title, albeit through the ‘agency’ of individuals. However, it is submitted that the conventional approach favours the exclusion of juristic persons.

2.3.3.3 The effect of employment on ownership, attribution and inventorship

The ‘international’ patent system does not regard the context in which an invention is made as significant in the allocation of rights. Regardless of the circumstances under which the invention was made, the individual (natural person) inventor is the default owner. This approach also applies when inventions have been made by contributors who are in an employment relationship at the time. Consequently, entitlement to ownership and attribution between employers and employees depend on whether the claimants meet the definition of inventor under the patent regime.

As between the employer and employee, the only contribution which the former, as a juristic person, can make is a resource contribution. The intellectual contribution which defines inventorship emanates from the individual employee. The obvious consequence is that under the archetypal approach, ‘inventor’ status, and as a result also default ownership, are ascribed only to the employee. The employee is therefore recognised as the person whose contribution must be incentivised through the grant of the patent. This places employees in the position of patent owner which enable them to commercialise the invention through licensing or assignment. Under patent law the employer can claim title only if the employee transfers his or her rights in the patent as permitted under the patent system.

Nonetheless, there is no obligation on the employee-inventor to divest him- or herself of entitlement in favour of the employer simply on the basis of an employment relationship. The employee may, however, choose to transfer the invention in response to obligations arising outside of the patent domain. The legal consequences will here depend on the basis for the transfer, and in the employment context, will at least involve labour law considerations. Consequently, labour law policies, along with considerations from areas like contract, will come into play where patent law is silent.

The benefit of attribution or the right to be mentioned as the inventor, would likely even in the case of an assignment of the patents to the employer, remain with the employee. It inheres in the inventor and there is no provision for it to be transferred.

The agreement to transfer the rights to the patent for the invention from the employee-inventor to the employer may occur under various circumstances, which in turn will determine the regulatory implications. One way of considering the range of circumstances is to divide such agreements to transfer rights to the patent into those arising before the invention was made, and those concluded after the creation of the invention.

In the first situation, namely the transfer of future inventions, at least three scenarios arise. The first is where the parties have yet to establish an employment relationship but agree to the transfer of the invention when it arises. The second is where the parties include the obligation to transfer future inventions in the conditions of employment. The third situation is where the parties are in an employment relationship the terms and conditions of which have been agreed upon, and they subsequently enter into an agreement whereby the employee agrees to assign future inventions. These agreements may broadly be referred to as 'preinvention' agreements or assignments.

In the second situation – agreement to transfer rights after the invention has been made – three analogous scenarios arise: the first pre-dates an employment relationship and the inventor assigns the invention to his or her future employer; in the second the invention exists prior to the employment relationship and the transfer of its ownership is included as a condition in the employment contract; and the third is where the employee makes an invention during the subsistence of the employment relationship and thereafter enters into an agreement to transfer ownership to the employer.

While patent law does not distinguish assignment in the above situations from the ordinary course, the employment relationship attracts labour law considerations which may place limits on freedom of the parties to enter into such transactions. Such limitations arise as a consequence of the policy considerations underlying

labour law. Where such constraints are informed by policies which do not align with patent policy, there is the risk of an allocation model which does not further the purpose of the patent system. The issue then becomes one of trying to balance policies from different perspectives in a way that takes into account these realities.

The next section explores the effect of employment on the inventorship context.

2.4 STAGE 3: THE EMPLOYEE-INVENTION PARADIGM

2.4.1 Introduction

The patent system is geared towards directing both ownership and attribution to individual inventors. This notwithstanding, patent ownership is dominated by firms who are not recognised by default. This real disjuncture between inventorship and ownership, and to a lesser degree also attribution, is symptomatic of the failure of the current system to allocate rights in line with the contemporary context in which patentable inventions arise. It is therefore necessary to redefine the inventorship context in a way that reflects the dominant presence of corporate patentees and the labour law policy considerations which are implicated as a consequence of the employment relationship between the inventor and the firm.

To this end, what follows is an exposition on how firms have become patent owners in a system built on individualism, and how labour law is pulled into the determination of patent ownership. An analysis of the extent to which the current patent system operates as an incentive mechanism in the context of corporate inventive activity is then undertaken. In order to establish a theoretical context for this analysis, I make a number of assumptions regarding the characteristics of corporate inventive activity. These assumptions underlie my re-conceptualisation of the incentive function of patents which I present at the close of this chapter and which I later use as the basis for making conclusions and recommendations for an optimal allocation for South Africa in Chapter 6.

2.4.2 From Employee-inventors to Employer-owners: The Implication of Labour law

As explained earlier, protection for inventions through patents or analogous systems was a feature of many national systems even before the emergence of international instruments promoting the use of patents.¹¹³ Early technological development allowed the association of particular individuals with both the intellectual contribution behind the invention, and its development into a useful product or process. Gubby for example, talks of the ‘businessmen inventors’ as opposed to the amateur and professional inventors as ‘artisans, manufacturers, millwrights or machine-makers interested mainly in patents which related to their own branch of business’ and who ‘might devise an invention themselves or purchase an invention relevant to their business’ as dominating the patent landscape from the mid-1700s.¹¹⁴

By the time the Paris Convention came into effect in the mid-1880s, the process of industrialisation had been underway in Britain for at least 100 years and had spread abroad. Industrialisation introduced changes into the way in which inventions were developed. Advances in technology and the rise of companies around technological developments meant that inventive activity became increasingly complex and expensive, and consequently more corporate.¹¹⁵ To be competitive, firms had to improve productivity by operating more innovatively. Some companies devoted substantial resources to industrial research,¹¹⁶ thereby transforming into ‘knowledge-creating’ companies.¹¹⁷ The model for these innovative corporations is commonly ascribed to Thomas Edison’s Menlo Park laboratory built in 1876. It was ‘staffed by scientists and tradesmen to work on a multitude of projects’ so that ‘[f]ar from being

¹¹³ For example, the first US Patent Act 1790; the British Statute of Monopolies; and subsequent British legislation such as the Patent Acts of 1835 and 1952.

¹¹⁴ Gubby (n47) 246.

¹¹⁵ Fisk C *Working Knowledge Employee Innovation and the Rise of Corporate Intellectual Property 1800-1930* (2009) 240. Also, Gubby (n47) 246; Simmons J ‘Inventions made for hire’ (2012) 2 *NYU Journal of Intellectual Property and Entertainment law* 34. See also Lamoreaux N & Sokoloff K ‘The decline of the independent inventor’ in Scott K & Troy P *Perspectives on Commercializing Innovation* (2012) on this trend in the US.

¹¹⁶ Drahos & Braithwaite (n74) 40-1.

¹¹⁷ Ibid.

the lone inventor, Edison in fact managed an invention factory'.¹¹⁸ Edison was a key proponent of mass invention and held over 1 000 patents in the US, and at least as many across other jurisdictions, including Britain. Drahos notes that between 1921 and 1941 'the number of industrial research laboratories went from 300 to 2200, and that these laboratories employed more than 700 000 research staff'.¹¹⁹ Companies like Du Pont, General Electric, AT&T, Westinghouse, and Parke Davis are examples of early 'knowledge-creating' companies.¹²⁰

The push for technological advancement meant that innovation-driven companies engaged the services of individuals with the intellectual skill to develop new products and processes. This created the opportunity for individuals to be involved in research activities which would otherwise have been too costly or risky to undertake on their own. Under the archetypal patent ownership paradigm which informed the early patent laws, these individual inventors were the first owners of the patents and were in a position to negotiate adequate compensation for what was in effect, the sale of their inventions to the company.

With industrialisation came changes in the regulation of the world of work. One such change was a shift from an agricultural economy and individual artisans plying their trade, to an economy in which increasing numbers of people were dependent on firms for work.¹²¹ Firms, in turn, needed systems to control the growing workforce. Work relationships became conceptualised as contracts in terms of which the worker 'sold' his or her labour to the firm in exchange for wages. However, the blueprint for the relationship was heavily influenced by the master-and-servant laws which meant that the work contract incorporated the concepts 'power' and 'dependency'.

These creative workers became part of the complement of 'non-manual' or 'professional' labour needed by growing corporations. The move to conceptualise work relationships as contractual had no effect on the patent laws which remained

¹¹⁸ Id 40.

¹¹⁹ Id 40-1.

¹²⁰ Ibid.

¹²¹ See further Cornwell (n65) 302; Dutfield (n65) 109-11.

rooted in the notion of the individual inventor as the cornerstone of the patent system. This did not change with the adoption of the Paris Convention, even though the flow of creative activity was predominantly firm-directed. For inventors, this was a potential source of bargaining power in their dealings with firms,¹²² although, it is submitted, the Paris Convention subtly facilitated corporate ownership by leaving ownership to national discretion.¹²³

However, for the inventors who were increasingly party to 'sale of labour' agreements which made them economically dependent on employers, the autonomy to deal with patentable inventions was eroded by the firm claiming not only the inventor's labour, but also any invention as a term in the work contract. Although the patent system appeared to favour the employee with a bargaining chip in the form of default ownership based on inventorship, the employment contract remained unequal and even in the case of skilled workers, such as scientific staff, it reflected the dependency of the worker on the firm. In this way, the common-law contract of employment became a vehicle for employers to claim title to patentable inventions made by employees.¹²⁴

Fisk effectively captures the impetus for this shift when she writes that 'The old legal conception of individual invention (and therefore, individual ownership) seemed anachronistic. The acceptance of corporations as legal 'persons' with all the rights and privileges of personhood provided a new legal framework to reconcile the traditionally individualistic presuppositions of patent and copyright law, which focus on *the* author or *the* inventor, with the new social reality of collective innovation. The cultural change and the legal change coincided and reinforced one another in ways

¹²² Id 43. Also Simmons (n115) 42.

¹²³ Bodenhausen (n55) 15.

¹²⁴ See discussion on the developments in America in Simmons (n115) 37-42; also Fisk (n115) 240: '[a]s is always the case with law, the changing applications ultimately changed the rules themselves. As the settings in which ideas were manufactured became more 'corporate' – more bureaucratic, more collective, and quite literally, under the aegis of corporations – and as the claimants to idea ownership increasingly were corporations, what judges thought of idea ownership and how firms managed creative employees changed too...judges developed a view of contract law generally, and the employment contract specifically, that operated both as a conceptual technology and as a mechanism of social control to enable a shift in idea ownership'.

that naturalized the radical developments and made a revolution seem normal, inevitable, and uncontroversial.¹²⁵

In effect however, although the archetypal patent model did not align with the way in which the practice resulted in employer control over the invention, it remained the default position.

This assimilation of inventors into the general workforce means that inventors are trapped in a world of work characterised by inequality and vulnerability accompanying the ordering of labour by contract between economically unequal parties. The employment contract, while being a voluntary bilateral agreement between the employer and the employee in terms of which the employee undertakes to provide labour in exchange for remuneration, exhibits additional traits which manifest across jurisdictions.¹²⁶ Its key characteristic is that the employer is in a superior hierarchical position to the employee. This position of power generally arises from the employer's influence over the employee's execution of his or her contractual obligations. This includes: '(1) the power to assign tasks and to give orders and directives to employees (directional power); (ii) the power to monitor both the performance of such tasks and the compliance with same orders and directives (control power); [and] (iii) the power to sanction both the improper or negligent performance of the assigned tasks and disobedience to given orders and directives (disciplinary power)'.¹²⁷

A response to this worker vulnerability has been to develop labour laws as a 'countervailing force to counteract the inequality of bargaining power which is inherent and must be inherent in the employment relationship'.¹²⁸ One line of development is support for the contractual notion by providing workers with a tool by

¹²⁵ Fisk (n115) 240.

¹²⁶ Casale G 'The employment relationship: a general introduction' in Casale G (ed) *The Employment Relationship: A Comparative Review* (2011) 3.

¹²⁷ Ibid.

¹²⁸ Davies P & Freedland M *Kahn-Freund's Labour and the Law* (1983) 18; also referred to in *Sidumo & another v Rustenberg Platinum Mines Ltd & others* (2007) 28 ILJ 2405 (CC) at [72]

which to gain greater bargaining power.¹²⁹ This is seen in the rise and recognition of collective bargaining and representative structures.¹³⁰ A second line of development is more substantive and attempts to secure justice for workers by bargaining on their behalf. Therefore, interventions for minimum conditions of service to be implied into work contracts, aim to ensure for the most economically vulnerable a fair bargain. Although the concerns of workers vary across countries, the general themes emerge from the attention of international organisations – in particular the ILO – to the issue of the employment contract as a means of achieving social justice.¹³¹ The ILO, founded in 1919, provides a forum for workers, employers, and governments to contribute jointly to the development of labour standards.¹³² This tripartite structure is a defining feature of the Organisation and ensures that workers are equally represented at the international policy level.

It should be clear that it is not possible to allocate rights in inventions between employers and their employees without taking into account the effect that employment has on the bargaining power of the inventor. Similarly, the role of firms in furthering the goals of innovation cannot be ignored. Consequently, both labour and patent policies will drive an optimal allocation.

2.4.3 Responses at International Level

It would seem that for both employers and employees, this development would precipitate a shift to an alternative approach. From the employer side, a default rule favouring employer ownership would eliminate the transaction costs and uncertainty

¹²⁹See further Langille B 'Labour law's back pages' in Davidoff G & Langille B (eds) *Boundaries and Frontiers of Labor Law* (2006) 25.

¹³⁰ See further Davies & Freedland (n128) Ch3 on the role of collective bargaining.

¹³¹ See Casale (n126) 3; ILO 95th session 'The employment relationship' Report V1 2006. See Weiss M 'International Labour Standards: A Complex Public-Private Policy Mix' in Olivier M, Dupper O & Govindjee A *Labour and Social Security Law* (2013) 4. The conventions and recommendations include, for example, the Right to Organise and Collective Bargaining Convention, 1949 (No. 98), Collective Bargaining Convention, 1981 (No.154), Termination of Employment Convention, 1982 (No. 158)

¹³² On the ILO see <http://www.ilo.org/global/about-the-ilo/lang--en/index.htm> (Date of use 30 November 2015.)

of relying on contract to acquire rights from the employee. For the employee, the employment relationship places him or her at a disadvantage in the negotiation of adequate reward for the invention, or indeed the assignment of the invention.

However, the engagement with the issue in the international fora, while illustrative of some of the concerns, has made very little difference.

The effect of employment on the position of employee-inventors had already been formally identified as a concern by employees in the 1930s. The first meeting of the Advisory Committee of Salaried Employees under the League of Nations in 1931, put forward a 'Resolution concerning the Protection of Salaried Employees' Inventions' which called on the ILO to 'take all measures which seem calculated to hasten on the adoption of international regulations on inventors' rights for salaried employees, which should take account of authors' rights for inventors'.¹³³ As to the nature of the regulations, the committee's primary points of importance included that the inventor as the person who contributed the intellectual work be entitled to protection for the invention, including a patent; or if this could not at the time be guaranteed by national laws, at least attribution in the patent documentation. It also called for a restriction on 'the individual freedom of contract ... as is already done in certain cases for labour legislation', and that pre-invention contracts be 'permitted only when the salaried employee has been engaged specially for research work with a view to making inventions'.¹³⁴ In addition, employees wanted 'special compensation' where inventions had been transferred to the employer.¹³⁵ There was little further development and it was only after the Second World War that the issue resurfaced in the ILO.

What is noteworthy is that the concerns found their way into a different forum – there was a proposal for the inclusion of such remuneration in the Paris Convention. This

¹³³ ILO Advisory Committee on Salaried Employees' Resolution concerning the Protection of Salaried Employees' Inventions International Labour Office (League of Nations) *Industrial and Labour Information* vol XXXVIII (April-June 1931) ('Resolution') 99-100. The reference to authors' rights no doubt refers to a moral right of attribution for inventors. See Cornwell (n65) 301-2; Dutfield (n65) 115-117.

¹³⁴ Id 100.

¹³⁵ Ibid.

was rejected and the only change was the introduction of article 4^{ter} in 1934 which secured for individual inventors generally the right to be named as the inventor. Although a response to the agitation by mainly employee-inventors, the provision steered clear of any direct reference to the employment context.¹³⁶

When the ILO was again apprised of the matter after the war, the concerns of inventors found a home in a new Advisory Committee on Salaried Employees and Professional Workers set up in 1947. Unlike the previous committee, this one had increased status and was constituted on a tripartite basis to include employers. Nationally, many countries had introduced measures to deal with the apparent disjuncture between patents law and labour law. These measures, as noted by the Advisory Committee in its 1952 report, entailed three broad aspects: 'the drafting or revision of patent laws; the inclusion in legislation on the contract of employment of clauses covering the rights of salaried inventors; the inclusion of similar clauses in collective bargaining agreements'.¹³⁷ According to the Committee, this was a response to the economic and industrial developments which had 'seen an increasing number of persons lose their previously independent status and be absorbed in the economy as employed persons'.¹³⁸ The inventor, while independent under patent philosophy, had become one of a range of inputs in the industrial process.

The Advisory Committee continued to engage with the concerns of salaried inventors at various meetings and maintained the idea that an international standard be set in this regard.¹³⁹ It was only in 1984, however, that the Governing Body of the ILO resolved to convene a Tripartite Meeting on Salaried Authors and Inventors. The

¹³⁶ See Wolk S 'Remuneration for employee inventors— is there a common European ground? A comparison of national laws on compensation of inventors in Germany, France, Spain, Sweden and the United Kingdom' (2011) 42 *IJC* 274; Dutfield (n65) 117.

¹³⁷ ILO Advisory Committee on Salaried Employees and Professional Workers Report 1 Second Session, Geneva 1952 General Report International Labour Office, 1951 ('Report 1952') 44.

¹³⁸ *Id* 6.

¹³⁹ For example, in 1959 the International Labour Conference at its 43rd Session requested the ILO to convene a Committee of Experts to consider the problems; see International Labour Conference Report VII Problems of Non-Manual Workers, including Technicians, Supervisory Staff, etc Forty-Third Session, Geneva 1959 International Labour Office, 1958.

terms of reference of the meeting were: '(a) to adopt conclusions on the principles that should be applied in order to protect the rights of salaried authors and inventors, having due regard to the interests of employers; (b) to make recommendations for future ILO actions'.¹⁴⁰ It was stated in the introduction to the meeting that while the protection of works by patents was not within the ILO's competence, 'from the standpoint of labour law and social justice, which clearly fall within the ILO's competence, both salaried authors and inventors are faced with common problems'.¹⁴¹ The report of the meeting which happened in 1987 acknowledged that the complexity and controversy associated with 'the conflict between the principles of labor law and those of intellectual property' and the need to 'reconcile these principles and protect the differing interests of both employer and worker'.¹⁴²

Employees argued that the act of inventing warranted that the employee-inventor have rights in the invention and share in the resulting benefits. Their view was that while employees may be 'recruited to carry out research, make discoveries, analyse and solve specific problems', it was not a condition of employment that they actually invent 'as evidenced by the fact that failure to invent in no way implies that their contractual obligations are not being respected'.¹⁴³ Because 'not everyone has what it takes to be an inventor or creator' and it is the 'inventive or creative mind' which is required to 'actually bring an idea or project to fruition', the act of inventing ought to attract additional remuneration.¹⁴⁴ Therefore, the resource contribution of the employer is subsidiary in the inventive process and is in any event recouped through the benefits which accrue as result of the invention.¹⁴⁵

¹⁴⁰ ILO Report of the Tripartite Meeting on Salaried Authors and Inventors 24 November-2 December 1987 Geneva 1988 TMSAI/1/1987/9 ('Report 1988') 1; and further ILO Tripartite Meeting on Salaried Authors and Inventors 'The Protection of Salaried Authors and Inventors' Geneva 1987 TMSAI ('Meeting') 6.

¹⁴¹ ILO Meeting (n140) 1.

¹⁴² Id 9. A substantial report had been compiled in anticipation of the meeting and drew responses from at least 41 countries.

¹⁴³ Id 9.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

Although the meeting dealt with a range of issues, including the economic rights, moral rights, effect of termination on employment, and dispute settlement,¹⁴⁶ there was no unanimous adoption of any of the proposed conclusions on any of the issues. The only agreement between the three branches was that the ILO undertake further research, compile and disseminate information, and study the law to allow its governing body to examine the possibility of placing the issue of salaried inventors on agendas of future sessions of the International Labour Conference.¹⁴⁷ Since that 1987 meeting the issue has attracted no further attention in the ILO.

It is worthwhile to note that even though employees' claimed title and additional remuneration, there was no dispute that ultimately it was intended that the employer would be in the position to exploit the invention. The concern was to ensure that the employees' contributions were properly recognised mainly in monetary terms. The issue had been formulated as one of balancing interests of the employer and employee, and not of furthering innovation policy directly.

In the international intellectual property fora, there have been no developments since the 1934 revision of the Paris Convention. There is no directive or model generally applicable to all members of WIPO, for example. The WIPO's engagement with the issue is limited to references in two non-binding Model Laws for developing countries implementing the patent system. The Model Laws have no binding effect and serve merely as examples of possible formulations of patent law. However, they acknowledge the possibility of countries implementing default first-ownership rules involving a deviation from the standard first-ownership approach.¹⁴⁸ As such, they are also indicative of an acknowledgement that the original formulation of the system does not respond to realities of corporate inventorship.

Consequently, in 1965 when the United International Bureaux for the Protection of Intellectual Property ('BIRPI'), now the WIPO, introduced its Model Law 1965,¹⁴⁹ it did so on the basis that it was at best a model and not a uniform law, especially as

¹⁴⁶ *Id.*

¹⁴⁷ ILO Report (n140) Annex 1 1-2.

¹⁴⁸ See further Cornwell (n65) 309-310.

¹⁴⁹ BIRPI Model Law 1965 (n88).

it is not possible to generalise given the differences in countries' social, economic, technical and cultural structures.¹⁵⁰ The guiding principles state that patents are 'the traditional means of encouraging *inventive activity* and the *necessary investments* for *research* and for *industrial exploitation of inventions*'¹⁵¹ – a clear recognition of the different contributions which the patent system needs to recognise.

The Model Law 1965 provided specifically for employment situations by presenting an alternative default ownership position. It linked ownership to the terms of the employment contract and to the provision of resources; and recognised an employee's right to remuneration for the inventive activity.

Section 10(1) provides as default, that 'an invention made in the execution of the contract shall belong to the person having commissioned the work or to the employer'.¹⁵² Where the work was made by the employee, the employer similarly owned the invention even though 'the employment contract does not require the employee to exercise any inventive activity', provided that 'the employee has made the invention using data or means that his employment has put at his disposal'.¹⁵³

Thus, it based a shift in default ownership either on the obligations in the contract or on the use of the employer's resources.

The Model Law 1965 also anticipated an employee's right to remuneration for the invention. Where the invention was made in the execution of the employment contract, remuneration for the invention arose for inventions of 'very exceptional importance'.¹⁵⁴ In this case, employer ownership was based on 'the employee [being] under a contractual obligation to carry out an inventive activity'.¹⁵⁵ The basis for additional remuneration would likely be that exceptional importance was not

¹⁵⁰ Id 12. For the history of the Model Law see id 12-13; Greenberg S 'The WIPO Model Laws for the Protection of Unpatented Know-How: A comparative analysis' (1985) *Int'l Tax & Bus Law* 52-5.

¹⁵¹ BIRPI Model Law 1965 (n88) 12, 17.

¹⁵² Id 29.

¹⁵³ Ibid.

¹⁵⁴ Ibid

¹⁵⁵ Id 29-30.

anticipated when the contract was concluded and so was factored into the employee's salary.

Where the invention was made using data or means supplied by the employer, the employer's right arose, according to the commentary, because 'it would be inequitable to expose the employer to competition with his employees because of the fact he has put at their disposal data and means enabling them to make an invention'.¹⁵⁶ Any inequity towards the employee appeared to be mitigated by his or her right to 'additional remuneration'¹⁵⁷ – although the commentary states that 'the supplementary remuneration for his fruitful efforts must be determined taking into considerations his salary and the importance of the invention patented by the employer'.¹⁵⁸

The right of the 'true inventor' to be named also featured with the condition that it 'shall not be modified by contract'.¹⁵⁹ However, the inventor had formally to request such attribution as opposed to its being automatically implemented.

The 1965 Model Law was subject to revision.¹⁶⁰ In a draft revision the provisions acquired a somewhat more complicated gloss which eventually found its way into the WIPO Model Law 1979.¹⁶¹ Like the 1965 version, it is premised on the view that the patent system plays a role in promoting investment in innovation.¹⁶² In so far as employee-inventions are concerned, the Model Law 1979 echoes the 1965 formulation that 'when an invention is made in execution of a commission or employment contract, the right to the patent for that invention shall belong, in the absence of contractual provisions to the contrary, to the person having commissioned the work or to the employer'.¹⁶³ Similarly, an employee who has 'lost'

¹⁵⁶ Ibid.

¹⁵⁷ Ibid.

¹⁵⁸ BIRPI Model Law 1965 (n88) 30.

¹⁵⁹ Id 31.

¹⁶⁰ See further WIPO Draft Model Provisions 1975 (n88) 8.

¹⁶¹ WIPO Model Law 1979 (n88).

¹⁶² See Preamble. Id 15.

¹⁶³ Id 21.

ownership on this basis is only entitled to additional remuneration for the invention if 'the invention has an economic value much greater than the parties could have reasonably foreseen at the time of concluding the contract'.¹⁶⁴ This amount is to be determined by agreement or by a court. The reference to 'economic value' as a basis for determining a claim is a new addition and the provision as whole is more explicit in the basis for the remuneration.¹⁶⁵ The remuneration is because parties could not have contracted in full knowledge of the value of the invention at the time of the contract.

To the extent that the inventive activity falls outside the requirements of the employment contract but within the field of activities of the employer, and is made using the data or other means provided by the employer, the Model Law provides two options. First, that the invention belongs to the employer subject to the employee having 'a right to equitable remuneration taking into account his salary, the economic value of the invention and any benefit derived from the invention by the employer'¹⁶⁶ – again an echo of earlier model laws but with the reference to the economic aspect.

The alternative rule is that the employee owns the invention save if the employer notifies the employee by a written declaration of interest within four months. Once again the employee is entitled to equitable remuneration as above. The commentary suggests that the choice between the two will depend on country needs. It posits that the choice of approach could serve to ensure that the patent rights remain with national industries or individuals, depending on where ownership of the firm lies.¹⁶⁷

It is submitted that the more relevant enquiry would be into which one would act as the greater incentive for further investment in innovation in the country, as opposed simply to vesting ownership in a national. The fact of ownership must lead to the growth even in the absence of a contractual deviation. Thus, if ownership is vested in employee-inventors, then this must result in the positive growth even in the absence of the employee thereafter acquiring rights through contract.

¹⁶⁴ Id 21 and see comment at 65.

¹⁶⁵ Id 21.

¹⁶⁶ Ibid.

¹⁶⁷ Id 65.

In so far as determining what would constitute equitable remuneration, the commentary provides that in principle this is fixed by contract but that the employee's salary, the economic value of the patent, and the employer's benefit derived from the invention through, for example, a reduction in manufacturing costs and gains in efficiency and quality, are factors to be taken into account.¹⁶⁸ Like the 1965 one, the 1979 Model Law retained the provision nullifying contractual provisions less favourable to the employee.

It also placed greater emphasis on the inventor's right to be named. The right can only be avoided if the inventor makes a written declaration to the Patent Office advising that he or she does not wish to be named. However, to counter potential abuses, the rejection of the right may not be a consequence of 'any promise or undertaking by the inventor' to make such a declaration to any person.¹⁶⁹ It is hard to see under what other circumstances the inventor would wish not to be named. Indeed, an inventor who wishes to transfer the patent may find that such a declaration would be more attractive to potential purchasers and add a premium to the price.

This brief overview of the international responses serves to foreground the main sites of contestation. A distinction is clearly made between whether the invention is the response to a contractual obligation to do so and which is remunerated by a salary based on effort; and where the reason for the ownership rule is compensatory for the use of resources and equitable in so far as the invention could be used in competition with the employer. In the latter case, the salary is not commensurate with the production of an invention. It seems that in both the ILO and WIPO, employer-ownership is not anathema to the modern inventorship situation. The responses are to labour concerns of employees as opposed to a defence of a patent philosophy that vests ownership in inventors.

¹⁶⁸ Id 66.

¹⁶⁹ WIPO Model Law 1979 (n88) 67.

2.4.4 The Characteristics of Employee-Inventorship

This thesis is based on the assumption that the development of patentable inventions by employee-inventors takes place under conditions which require a deviation from the archetypal allocation of patent rights if the incentive function is to be realised. In this section, I explain the assumptions I make about the characteristics of modern inventorship and how it differs from the model to which the traditional system is built upon. It is this understanding of inventorship which is being referred to in the analysis of the current international approach and the reconceptualising of the inventive function which follow in this Chapter.

Firstly, technological development is driven by increasingly complex innovations.¹⁷⁰ This has a number of implications. For a start, the development of an invention is not possible without resources. This resource component may be broadly understood to include all inputs which are made, such as human capital, facilities, and equipment.¹⁷¹ With the provision of resources is an associated cost which may be reduced to monetary terms. A consequence of this is that a financial investment is a *sine qua non* for the development process. Even the intellectual effort which the patent system recognises in its criteria for patentability, is a resource to which a cost is associated.

Another consequence of the complexity in the process is that inventions are likely the result of collective endeavour.¹⁷² Although it may be possible technically to ascribe inventorship to particular persons, non-inventors would inevitably also have been involved. Furthermore, the nature of the inventions which are regarded as patentable may be components of larger projects. In other words, inventorship is

¹⁷⁰ See Grandstrand (n10) 323.

¹⁷¹ See Dutfield G 'Collective invention and patent law individualism, 1877-2012 – or, the curious persistence of the inventor's moral right' in Araposthatis S & Dutfield G *Knowledge Management and Intellectual Property* (2013) 109.

¹⁷² See further Lemley M 'The myth of the sole inventor' (2012) 110 *Michigan Law Review* 709; also Dratler J 'Incentives for people: The forgotten purpose of the patent system' (1979) 16 *Harvard Journal on Legislation* 168 on modern innovation.

disaggregated so that the inventive contributions of individuals only really gain value when they are considered as part of a bigger project.

Secondly, the motivation for engaging in activities which lead to patentable inventions is driven by the corporate context in which individuals work. Where the inventor is party to a work agreement which anticipates an inventive output, the scope and nature of the inventive activity would have been informed by the terms of the agreement. Thus, where the services of an inventor had been engaged to deliver a particular result, the impetus of the inventor's behaviour is his or her obligation to meet the terms of the contract. Similarly, where the inventor is employed under a contract of ongoing service, the motivation for engaging in the activity which gives rise to the invention may arise from obligations in the employment contract.

In the employment situation, the employee's duties and associated activities may culminate in an anticipated patentable invention. In other cases, an unexpected invention may arise out of the general research efforts of the employee. A characteristic of the employment relationship is that the employee is paid a salary for making his or her services available to the employer. Given that it is not possible to predict whether a patentable invention will result from an employee's efforts even if they are directed to finding a particular technical solution, it can hardly be said that an employee who does not produce a patentable invention as a solution would not be entitled to a salary.

A further point of note is that not all inventive activity by employed inventors arises during conventional work hours while the employee is on the employer's premises. The nature of the industry and the individual firm strategy will affect the way in which employees execute their tasks. This may include virtual or remote offices and employee discretion in determining when and how to work.

It is these underlying characteristics of employee-inventorship that determine whether the patent system functions as an individual incentive mechanism for innovation.

2.4.5 Analysis of the Incentive Effect of the Archetypal Allocation on Employee-inventions

I turn now to an examination of how the current patent system regulates ownership and attribution against the international labour law background and my assumptions as to the nature of employee-inventorship. The concern is with whether the way in which benefits associated with the patent are allocated in this context, recognises the contributions of both employers and employees. In principle, this translates into a question of whether and how the international system recognises the intellectual contribution and the resource component where the former is made by the employee and the latter by the employer.

The international instruments do not distinguish inventorship in the employment context. Therefore, regardless of the employer's investment the system will only recognise the intellectual contribution of the employee-inventor. This eliminates any possibility of the corporate employer claiming title through inventorship if the latter is strictly construed as referring only to natural persons.¹⁷³ Furthermore, the attribution right is limited to the inventor, who in the employment context is the employee. On this basis, the patent system appears to fail in its role as an incentive mechanism to encourage both employee and employer.

However, one should not discount the possibility that the system may nonetheless incentivise the contributors even in its current form. Two such possibilities are considered here.

The first is to argue for an interpretation of 'inventor' which includes an employer. If the employer is an inventor, it would, like any other inventor, have the rights of attribution and ownership. This outcome necessitates that the system embrace juristic persons as inventors which can be achieved by deeming the employer an inventor based on the employee's intellectual contribution. Therefore, the employee

¹⁷³ Cherensky argues that corporate inventorship would be a possibility if ownership of inventions were justified in terms of a 'personhood' theory. See Cherensky S 'A penny for their thoughts: Employee-inventors, preinvention assignment agreements, and personhood' (1993) 81 *California Law Review* 646.

must be assumed to be the amanuensis of the employer as, in practical terms, a juristic person is not able to formulate the intellectual contribution required for inventorship.¹⁷⁴ This approach works within the restricted view of inventorship that the system appears to support because it maintains the association of inventorship with patentability criteria.¹⁷⁵ A more direct approach is to construe inventorship more broadly to include the employer's investment contribution. However, this would severely strain the current formulation and, it is submitted, cannot realistically be supported if the link between inventorship and patentability criteria is maintained.

A second route is to step outside of the patent system to find an alternative way to recognise the employer's contribution. This would entail that the default allocation in favour of the employee-inventor remain, but that the system operate in a way that vests rights in the employer. The ownership in a patent and the right to apply for a patent are expressly transferrable and the system clearly anticipates that someone other than the inventor may be the patentee. This implies that the inventor is in a position to assign the patent rights to a non-inventor and to bargain over a suitable return for the loss of the patent. This would apply equally to the employment context and an assignment of rights could move title from the employee-inventor to the employer. This approach is clearly only relevant in respect of ownership as an incentive as it appears that the right to claim the title of 'inventor' is not similarly transferred.

The basis for such transfer would be an agreement between the parties under which the employee-inventor assigns rights to the employer in a way which results in the ideal balance of rights to further the incentive function of ownership. However, various factors mitigate against relying on contract.

The first is conceptual. The assignment of rights from the employee-inventor to the employer must ensure that both parties are in a legal position which encourages further invention. It is not simply an exercise of the employee-inventor's monopoly, but rather a means to recalibrate the system to take account of the employee-

¹⁷⁴ Note that the issue of the employment relationship is not a concern here.

¹⁷⁵ See 2.2.3.2 on the nature of inventorship.

invention paradigm and the incentive function. A contract offers the parties the opportunity to negotiate the outcome, and in this case, whether and how the rights will be transferred to the employer. This creates an opportunity for individual sets of parties (an employer and its employee) to negotiate in order to secure an advantageous personal outcome, as opposed to an outcome aimed at furthering the incentive purpose of the patent system. Where the incentivisation goals of the patent system are not a priority for the parties, any alignment will likely be a result of coincidence rather than of the will of the parties. Even if it is accepted that contract could form the basis for allocating rights in a way that sustains the incentive function, there are many qualifications.

One concern with relying on an assignment of rights from a default in favour of the employee-inventor is that any transfer of rights to the employer would have to be the result of an agreement with the employee and relate to each invention the employer seeks to own. There is no certainty that the employee will agree to transfer rights in the invention. Therefore from the employer's perspective, the costs associated with possible hold-ups resulting from the need to negotiate with employees could reduce the incentive to be gained by ownership.¹⁷⁶

A solution is for the parties to conclude pre-invention assignments in which the employee-inventor assigns future inventions. However, this brings its own problems, one of which is that such assignments are likely to form part of the terms of the employment contract between the parties. In this way, pre-invention assignments and other invention-related issues form part of the general negotiation of the employment contract, along with rights and obligations relating to work duties, company benefits, work policies, and remuneration. The benefits the employee derives from the employer may be directed at the employee's services in general

¹⁷⁶ Merges identifies the holdup costs associated with reliance on the existing system to transfer ownership from employee to employer, as problematic from an economics point of view. He argues that '[e]mployer ownership is more efficient for two transaction-related reasons: (1) it occurs at the commencement of employment and thus is far simpler than deals struck after an employee makes a specific invention; and (2) it eliminates the possibility of hold-ups by employee-inventors, thereby making it more attractive for a firm to invest in R&D by employees in the first place'. Merges R 'The law and economics of employee inventions' (1999) Fall *Harvard Journal of Law and Technology* 12.

and not specifically at calibrating the incentive function. Therefore the divestment of ownership under these conditions may be a disincentive for the employee to invent unless he or she can negotiate remuneration that realigns the loss with the incentive function. Such hesitation is compounded by the employee not knowing what might be invented in future or its value.¹⁷⁷

As explained earlier, a characteristic feature of employment contracts is the parties' inequality in bargaining power which stems from employee's economic dependence on the employer.¹⁷⁸ This is captured in Otto Kahn-Freund's oft-quoted observation that

‘the relation between an employer and an isolated employee or worker is typically a relation between the bearer of power and one who is not a bearer of power. In its inception it is an act of submission, in its operation it is condition of subordination, however much the submission and subordination may be concealed by that indispensable figment of the legal mind known as the “contract of employment”’.¹⁷⁹

Where such an imbalance exists, the employer – as a profit-seeking entity – will use its advantage to acquire more rights from the employee-inventor than the calibration of the patent system requires. Further, where the employee has been divested of rights to the invention in these circumstances, he or she will not necessarily be left with adequate compensation to serve as an incentive for further inventive contributions. Consequently, it must be admitted that reliance on the contract between the parties to trigger an outcome which advances the incentive function of the grant of the patent, is unlikely to yield any success.

The conclusion is that the existing system is not responsive to the employee-invention paradigm even at the most basic level of simply acknowledging the resource contribution of the employer.

¹⁷⁷ See Dreyfuss R ‘Collaborative research: Conflicts on authorship, ownership, and accountability’ (2000) 53 *Vanderbilt Law Review* 1212.

¹⁷⁸ See 2.4.2 above.

¹⁷⁹ Davies & Freedland (n128) 18.

2.5 THE INCENTIVE FUNCTION OF PATENT RIGHTS IN THE EMPLOYEE-INVENTION PARADIGM – A MODEL FRAMEWORK

2.5.1 General

I proceed from the assumption that the employee-invention paradigm which has been put forward in this Chapter¹⁸⁰ reflects the context in which most innovation takes place. Consequently, the effect of a particular ownership rule must be to encourage the development of inventions in that context. The employee-invention paradigm presupposes that an invention requires both the intellectual input of the individual employee and the financial investment of the employer. Without either, the invention would not be possible. How, then, should the system allocate rights to encourage both contributions? In the section, I extrapolate the fundamental principles which must inform the development of an optimal allocation. The more closely a system is aligned to these principles, the greater the probability will be that it will incentivise similar contributions by the employer and employee to another invention. It is to this model framework that the final conclusions in Chapter 6 about the South African system must respond.

It is assumed that an optimal allocation at the individual level ultimately supports the innovation purpose through the general availability of new ideas.¹⁸¹ The concern is simply what needs to be considered if the allocation is to encourage the individual contributors (employer and employee) to make their necessary contribution, either for the first time or to repeat it under the same circumstances. Negatively framed, will a particular allocation discourage the employer or the employee from making his, her or its contribution? The more likely either party is to be discouraged or will hesitate, the less effective the allocation serves as an incentive for further inventive activity. Consequently, it must be borne in mind that issues such as the effect of the allocation on post-grant commercialisation of the technology, or on employees' mobility and innovation outside the firm, are not part of this enquiry, although they are all part of the broader innovation landscape.

¹⁸⁰ See 2.4 above.

¹⁸¹ See 2.2 above.

It is submitted that an optimal default allocation is one which encourages both contributions. Although the aim is to determine the individual incentive effect, the ownership rule has to be driven by the policy considerations underlying both patent and labour law. It is submitted that it is not possible to ignore the latter, particularly in light of its automatic involvement when inventors are in economically-dependent work relationships with the employer-investor.

2.5.2 Assumptions on the Incentive Effect of Ownership

In this section I analyse the extent to which it can be said that ownership of the patent will be an incentive for either the employer or employee to repeat the contribution to make a further invention.

For the employer, it is assumed that the employer's investment in the development of the invention is an expense in pursuit of profit. Ultimately, it is a profit-motive that underlies the corporate's interest in the patent. However, the value of ownership to the employer, and thereby the efficacy of employer-ownership as an incentive, are influenced by other factors in the employee-invention context.

At one end of the spectrum, the employer may have specifically directed resources towards inventive activities related to its core business, and it may have engaged the services of employees to this end, through conditions of employment. The firm's goals are directed towards finding the solution which has been provided by the invention. In this case, patent ownership to the exclusion of the employer, is a disincentive for the employer to investing under the same conditions.

At the other end of the spectrum, where the invention is entirely unrelated to the employer's business, it is assumed that patent ownership by someone else will not necessarily discourage a repeat investment – provided that there is an alternative way for the firm to counter the loss. This does not mean that ownership itself would not be of value to the employer, but in order for the employer to recoup its expenses as owner, it would have to redirect resources away from its core business, either to the task of trying to sell the patent, or to embark on a new line of business to commercialise the invention itself. Thus, even though the use of the employer's

resources is not to a profit-making end, it is not necessarily the case that the firm will avoid a similar experience.

Between these extremes, inventions may arise which relate to the employer's business but fall outside of its planned investment strategy. Here, once again, ownership in the patent by someone else will only be a disincentive to repeat investment if the employer is not recompensed through some other channel, or if non-ownership results in a rival gaining a market share at the employer's expense.

It is submitted that, in general, the further removed the invention is from the employer's field of business, the greater the need for the employer to direct resources to non-core activities associated with the invention so as realise a profit from it if it were vested with ownership. This reduces the incentive effect of ownership, unless that the employer can recoup its costs elsewhere if it so wishes. Therefore, it is suggested that the employer would not actively exclude its contribution under similar circumstances, although it would also not specifically allocate resources to the cause. It is, in effect, neutral.

From the employee's perspective, the application of his or her intellectual faculties to the inventive activity which led to the patentable invention may have been self-directed, or may have been the result of his or her obligation to find a solution to specific problems, or a consequence of a more general imperative to engage in research efforts given the nature of the employer's business. The impetus for the actual inventive behaviour will determine the incentive value of ownership of the patent.

Where the invention is a response to a specific obligation, for example, a condition of the employment relationship, the ownership in the patent on the invention is likely to have little incentive effect. In other words, given the same situation, the employee would again engage in the necessary activity – his or her contribution is made in fulfilment of his or her contractual obligations. The 'incentive' or push to invent is therefore a consequence of the employment relationship and lies in the remuneration he or she receives for the labour provided. This assumes though that the reward which the employee receives for the effort is sufficient. However, given the inability to predict the actual effect of the invention before entering into salary negotiations, this

may prove inadequate in certain situations, most notably where the invention turns out to be more valuable than what was contemplated at the time that the reward or salary was negotiated.

However, if the terms of the contract are such that the employee is not adequately remunerated for the service, including the inventive activity which led to the patent, patent ownership may increase in incentive value to the extent that it enables the employee to be adequately rewarded. It is submitted, however, that it would only be an incentive to the extent that it is able to correct any imbalance in the benefits the inventor received as a consequence of the employment relationship. This in turn depends on the employee's ability to convert the patent into adequate remuneration. Generally though, a failure to be granted patent ownership will not be a disincentive to a repeat performance by the employee under circumstances where the motivation for the effort is to further the employer's business.

However, the likelihood of an inventor being discouraged from inventing should he or she not own the invention increases where the invention has been driven by his or her own needs. If the employee created the invention to develop and commercialise it him-or herself, the absence of ownership will be a disincentive to repeat the performance.

2.5.3 Assumptions on the Incentive Effect of Attribution

It is suggested that as a corporate's purpose in contributing to the inventive activity is the commercial advancement of the enterprise, the failure to be recognised for its contribution would not deter further contributions – provided that the omission does not influence the objective. The association of a firm with the invention may enhance its reputation which may, in turn, have spinoff economic benefits – for example, it may attract clients or investors. However, whether the failure to be attributed will be a disincentive will depend on whether the attribution of inventorship to someone else, such as the employee-inventor, will impact negatively on the return on investment.

While there is therefore some argument for extending the right to be mentioned to an acknowledgement of the role played by employers, particularly where the subject

matter of the invention was initiated by the employer, that in itself is likely insufficient to encourage a repeat investment.

For the employee, the right to be named as the inventor may be attractive for the prestige of being associated with the specific invention, or because it serves as an indicator of prolific inventive behaviour. Both aspects are likely to be important to inventors whose career-mobility is affected by their inventive activity. In such a case, a failure to be associated with the invention may be a disincentive to engage in inventive activity under the same circumstances. However, where the nature of the inventive activity is routine and part of a disaggregated process of invention, it is more likely that the lack of attribution would not necessarily be a disincentive to future similar behaviour, provided that it does not affect the employee's other rewards, namely a salary or future prospects.

2.6 CONCLUDING COMMENTS

This chapter has provided a backdrop against which to analyse and assess ownership in patents to employee-inventions. In this thesis, it is accepted that the patent system is a tool for the generation of new ideas necessary for a successful system which promotes innovation. It does this by encouraging the development of inventions through the grant of a patent. Where only one person is involved in the inventive process, that person will generally be recognised by the patent system as both inventor and first owner. However, where the invention is made in the employment context, the allocation of rights must balance the interests of both the employee and the employer in a way that gives effect to the incentive purpose of patents and is sensitive to labour law policies which are implicated as a consequence of the employment relationship between the contributors.

Under the international patent system, the current approach to the ownership of patents appears to be at odds with the assumptions about the incentive value of the patent ownership and attribution for employers and employees. The key concern is the seeming failure of the system to recognise the contribution of employers in a way that would directly incentivise repeated investment. It has been shown that efforts to

recognise employer contributions by relying on these instruments are limited to a strained interpretation of inventorship and the vagaries of contract law, particularly the employment contract.

In the absence of specific provisions in the international instruments, it is within the discretion of national systems to regulate ownership to give effect to the patent purpose in the employee-invention paradigm as they please. Whether or not the approach is one which furthers the incentive function of the patent system, depends on its alignment with the model framework which I have identified in 2.5 above.

CHAPTER 3

THE SOUTH AFRICAN REGULATORY FRAMEWORK FOR THE ALLOCATION OF RIGHTS TO EMPLOYEE-INVENTIONS

3.1 INTRODUCTION

Chapter 3 is the core of this thesis. In it I present the South African legal framework for the allocation of ownership in patentable inventions between employers and employee-inventors against the model framework in Chapter 2. I start by establishing that the purpose of patents in South Africa is in harmony with the assumptions as to the purpose of patents set out in Chapter 2. This is followed by a detailed examination of the current patent system to establish the nature and scope of the rules which allocate patent rights generally and, more specifically, in relation to inventions made in the employment context. Thereafter, the policy considerations associated with South African labour regulation, are expounded. I conclude with a commentary on the alignment of the South African approach with the Chapter 2 model framework for patents as individual incentive mechanisms in the employment context.

3.2 THE PURPOSE OF PATENTS IN SOUTH AFRICA

This thesis assumes that patents aim to encourage investment in innovation and it is submitted that in the South African context, this view can be sustained at least in so far as innovation appears to be a deliberate goal of government. The shift to a knowledge economy has been recognised by the South African government as fundamental to the country's development and economic growth strategy.¹ Increased technological innovation capacity features in policies like the New Growth Path² and

¹ See also Kraemer-Mbula E & Muchie M 'Neighbourhood system of innovation: South Africa as a regional pole for economic development in Africa' (2010) Institute for Economic Research on Innovation, Working Paper 3ff on South Africa's innovation role in Africa.

² Economic Development Department 'The New Growth Path: Framework 2011' 31.

the National Development Plan 2030.³ The need to increase innovation, and economic growth through improved science and technology ('S&T') strategies has been a refrain of various government departments over the last twenty years. This is evidenced by what was then the Department of Arts, Culture, Science and Technology's ('DACST') 'National Research and Development Strategy 2002' ('NDRS'),⁴ the Department of Trade and Industry's ('Dti') 'National Industrial Policy Framework',⁵ and the Department of Science and Technology's ('DST') 'Innovation towards a knowledge-based economy: Ten-year plan for South Africa (2008-2018)' 2007 ('Ten-Year Plan').⁶

Developments to date can be traced to the 'White Paper on Science and Technology: Preparing for the 21st Century' published by the DACST in 1996 ('White Paper').⁷ The purpose of the paper was to establish a framework for the development of S&T. It is premised on the assumption that if 'technological change is the primary source of economic growth ... economic and S&T policies have to recognise as central concerns the two processes – innovation and technology diffusion – which are the agents driving that technological change'.⁸ Technological change was to be achieved through a 'National System of Innovation' ('NSI') 'to try to

³ National Planning Commission 'National Development Plan Our Future: Make it Work' Executive Summary 15 August 2012, 23.

⁴ Department of Arts, Culture, Science and Technology 'National Research and Development Strategy' August 2002, 23. The DACST was split into the Department of Arts and Culture and the Department of Science and Technology at the same time that the NDRS was published. The Department of Science and Technology was tasked with giving effect to the NDRS (see 5 of NDRS).

⁵ Department of Trade and Industry 'National Industrial Policy Framework' 2007. See further http://www.thedti.gov.za/industrial_development/industrial_development.jsp. (Date of use 30 November 2015.)

⁶ DST 'Innovation towards a knowledge-based economy: Ten-year plan for South Africa (2008-2018)' 2007 2.

⁷ Department of Arts, Culture, Science and Technology 'White Paper on Science and Technology Preparing for the 21st Century' GN 1687 of 1996, GG 17675 20 December 1996 24. See also DST 'Final Report of the Ministerial Review Committee on the Science, Technology and Innovation Landscape in South Africa' GN 425 of 2012 GG 35392 30 May 2012 ('Report 2012').

⁸ DACST White Paper (n7) 23.

create the conditions that will support both creativity and innovativeness throughout our society'.⁹

Innovation was here described as 'the application in practice of creative new ideas, which in many cases involves the introduction of inventions into the marketplace'.¹⁰ The functions of the NSI included regulatory policy,¹¹ with intellectual property rights identified as one of the government's regulatory policy concerns.¹² It was anticipated that the DACST and the Dti would collaborate on revising patent laws to 'best promote innovation',¹³ with the 'value to the inventor of the patenting system' as one of two considerations in this revision.¹⁴ The view was that '[a]dequate protection fosters investment and stimulates innovation', and that the 'rights of South African inventors need to be rigorously protected'.¹⁵

Initiatives which followed the White Paper included the establishment of the 'Technology Innovation Agency',¹⁶ the 'National Research Foundation',¹⁷ and the 'Innovation Fund'. However, by the DACST's own admission some six years later, the NSI failed to deliver and had little, if any, broader effect.¹⁸ This was attributed various weaknesses including lack of funding; a decline in research and development expenditure by South African companies; deficiencies in the intellectual

⁹ Ibid.

¹⁰ Ibid.

¹¹ Id 30.

¹² Id 43.

¹³ Ibid.

¹⁴ Ibid. The second issue was a concern about South Africa's depository patent system and the need to move to a substantive examination system.

¹⁵ DACST White Paper (n7) 43.

¹⁶ See DST Ten-Year Plan (n6) 22-3. For more on the Technology Innovation Agency, see Naidoo D 'The Technology Innovation Agency (TIA): A public support mechanism for technological innovation in a developing country' (2009) 1 *African Journal of Science, Technology, Innovation and Development* ('AJSTID') 235, 235-42. See further www.tia.org.za (date of use 30 November 2015) for more on the Technology Innovation Agency.

¹⁷ For more on the National Research Foundation see www.nrf.ac.za. (Date of use 30 November 2015.)

¹⁸ DACST NRDS (n4) 20.

property (particularly in respect of publicly-financed intellectual property), and fragmentation of government science and technology management.¹⁹

The DACST's NRDS aimed to resuscitate the NSI. Among the strategic objectives were: innovation; science, engineering and technology; human resources and transformation; and an effective government S&T system.²⁰ Within the context of the latter, the low patenting rate by South Africans was perceived as 'evidence of a major weakness in South Africa's ability to become a knowledge economy'²¹ and indicative of the lack of 'appreciation for the value of intellectual property as an instrument of wealth creation in South Africa'.²² At the time South African inventors secured in the region of 100 USA patents annually, based on a priority registration in the South African Patent Office. This equated to 2,5 patents per million of the population in contrast to a developed country like Japan which had 776 patents per million annually.²³

As shown in Chapter 2, the value of patents statistics is at best dependent on the nature of the enquiry to which the data is applied. In South Africa this is particularly true given the limited nature of the information in local patent data resulting from the non-examining registration system. Although inventiveness, novelty, and industrial applicability are requirements for patentability, the absence of any of them will not prevent a patent being granted.²⁴ However, within the framework of government's

¹⁹ Id 21-2.

²⁰ Id 16.

²¹ Id 67.

²² Id 68.

²³ Id 67.

²⁴ See further Sibanda M in DST Innovation Fund 'The State of Patenting in South Africa Special Report 2007' (2007) 27. Although see the use of the data by Sibanda M 'Intellectual Property, Commercialization and Institutional Arrangements at South African Publicly Financed Research Institutions' in WIPO *The Economics of Intellectual Property in South Africa* (2009) 18. On the effects of a non-examining system see Gregory S 'Intellectual Property Rights and South Africa's Innovation Future' Trade Policy Report (2008) 12-14; Teljeur E *Intellectual Property Rights in South Africa: An economic review of policy and impact* (2002/3) 54, 57; Kaplan D 'Intellectual property rights and innovation in South Africa: A framework' in WIPO *The Economic of Intellectual Property in South Africa* (2009) 3; Pouris A 'Quantitative assessment of South Africa's inventive outputs: International

strategy to drive innovation, available statistics were considered indicative of a suboptimal level of innovative activity and a failure fully to harness the economic benefits that patents attract. However, the NRDS recognised increasing patent filings was not a guarantee of quality and economic value of the inventions.²⁵

Most of the criticisms in the NRDS was directed at publicly-funded institutions and so the focus was on a framework to manage this aspect.²⁶ Four years later, within the context of the NSI, the DST published its 'Intellectual Property Rights (IPR) from Publicly Financed Research Framework' ('IPR Framework')²⁷ to serve as a policy framework for the management of intellectual property financed by public funds. The IPR Framework identified inconsistent approaches to intellectual property management at public institutions and a failure to secure IPRs as two of its concerns.²⁸ The proposed solution of introducing legislation to address these concerns was supported by the argument that many other countries had introduced regulatory frameworks to increase patenting and commercialisation of inventions in this context.²⁹ Inventors, particularly academic inventors, were recognised as stakeholders who in the absence of benefit-sharing, saw little reason to patent their inventions.³⁰

At about the same time, the Innovation Fund published 'The State of Patenting in South Africa Special Report 2007' which reported on South African patenting activities between 1991 and 2005.³¹ It was based on the premise that it is 'generally

patent analysis' (2009) 20 *South African Journal of Industrial Engineering* 13, 15; Pouris A & Pouris A 'Patent and economic development in South Africa: Managing intellectual property rights' (2011) 107 (11/12) *S Afr J Sci.* 5-6.

²⁵ DACST NRDS (n4) 69.

²⁶ *Id* 68-70.

²⁷ DST 'IPR and Public Funded Research' Policy Document 'Intellectual Property Rights (IPR) from Publicly Financed Research Framework' July 2006.

²⁸ *Id* 29, 33.

²⁹ *Id* 8.

³⁰ *Id* 10. For an interesting analysis of inventorship in academia, specifically the effect of patents on inventiveness, see Lubango S & Pouris A 'Is patenting activity impeding the academic performance of South African university researchers?' 2009 *Technology in Society* 1.

³¹ Sibanda 2007 (n24).

accepted that a country's intellectual property in the form of the number of patents granted to its nationals, can be used as a proxy for both the extent of innovation and current and future economic growth potential'.³² The report underscored the commercial value that could be derived through patenting, and indicated that for the period under review patents were relatively stagnant in contrast to a general increase in filings at the WIPO and USPTO offices. The report attributed this in part to stagnation in the innovation system and a reduction in S&T output along with the impression that a non-examining patent system an ineffective protection mechanism.³³ At the time, according to the NRDS, South Africa was spending 0,7 per cent of GDP of R&D of which 0,29 per cent constituted government funds. The average OECD country expenditure at the time was 2,15 per cent of GDP.³⁴ Interestingly, the OECD's review of South Africa's innovation policy, published in 2007³⁵ did not identify the intellectual property system as a weakness.

Against this backdrop of government activity the Intellectual Property Rights from Publicly Financed Research and Development Act was promulgated in 2008³⁶ and, along with its regulations, was implemented in August 2010. There is, as yet, no clear indication of its effects on innovation.³⁷ The stated object of the IPPFRD Act is

³² Id 1.

³³ Id 27.

³⁴ DACST NRDS (n4) 21.

³⁵ OECD 'Reviews of Innovation Policy: South Africa' (2007).

³⁶ The IPPFRD Act 51 of 2008 (GG 31745 of 22 December 2008). Regulations made in terms of s17 of the Intellectual Property Rights from Publicly Financed Research and Development Act 51 of 2008 GN R675 GG 33433 of 2 August 2010 ('IPPFRD Reg'). For more on the legislative background see DST IPR Framework (n27); Visser C 'Intellectual property rights from publicly financed research: The way to research hell is paved with good intentions' (2007) 19 *SA Merc LJ* 363; Tong L 'Ownership of IP derived from publicly funded research: The state steps in' (2010) 5(6) *JIPLP* 409; Gregory (n23) 16-19; Sibanda 2009 (n24) 138; Chetty P 'Review of IPR Act and Regulations' (2009/2010) 10 *African Journal of Information and Communication* 78. At about the same time, the Technology Innovation Agency Act 26 of 2008 was passed its object being 'to support the State in stimulating and intensifying innovation in order to improve economic growth...' (s3).

³⁷ The available research tends to be institution-specific and as yet the overall impact, if any, on innovation in South Africa is not known. See, for example, Bansi R & Reddy K 'Intellectual property: From publicly financed research and intellectual property registration by universities: A case study of a university in South Africa' (2015) 181 *Procedia – Social and Behavioural Studies* 185.

‘to make provision that intellectual property emanating from publicly financed research and development is identified, protected, utilized and commercialised for the benefit of the people of the Republic, whether it be for a social, economic, military or any other benefit’.³⁸ It provides for ownership in and commercialisation of IP and for benefit-sharing arrangements to reward intellectual property creators. Its operation is limited to intellectual property made with public finance and only applies to private enterprises if they create intellectual property using public funds – for example, as part of a collaboration with a public research institution. The legislation is discussed Chapter 4 as one of the complementary bases for the protection of inventions.

At about the same time, the DST published its Ten-Year Plan to ‘help drive South Africa’s transformation towards a knowledge-based economy, in which economic growth is lead [sic] by the production and dissemination of knowledge for the enrichment of all fields of human endeavour’.³⁹ Two years later, in 2010, a review of the science, technology and innovation landscape was commissioned by the Minister of Science and Technology with the report of the Ministerial Committee released for public comment in 2012.⁴⁰ The first phase of the review was a survey of the innovation landscape with particular reference to the OECD’s 2007 review of South Africa’s state of innovation, the activities of the DST during the 2006-2009 period, and the role of the private sector in S&T. One of the Ministerial Review Committee’s conclusions on the OECD study was that ‘business enterprise should be placed at the head of an innovation system’.⁴¹ The second phase of the review addressed recommendations for the future of the NSI.⁴² The report noted with regard to creating an enabling environment for innovation in the private and social sectors, that intellectual property rights were regarded as important by businesses in the innovation sector.⁴³

³⁸ IPPFRD Act s2(1).

³⁹ DST Ten-Year Plan (n6) 1.

⁴⁰ DST Report 2012 (n7) 2 for the remit of the Committee.

⁴¹ Id 78.

⁴² Id 2-3.

⁴³ Id 145.

It is clear from this brief overview that the South African government's conceptualisation of the patent system is that patents serve as tools for advancing innovation capability.⁴⁴ To this end, patenting is encouraged even though the 2002 observation by Teljeur that 'there is no South Africa specific research available that assesses the impact on (sic) the IPRs regime on domestic innovation, technology dissemination, imports and licensing payments' still rings true.⁴⁵ In 2009, Kaplan also identified a lack of research in key areas such as 'the impact of the current IPR system on FDI inflows or on technology transfer to South Africa'.⁴⁶ Although Pouris and Pouris set out 'to assess the extent to which patent protection rights, as they are implemented in South Africa, promote or hinder economic development',⁴⁷ in effect they provide an overview of the regulatory environment without empirical evidence of the extent to which the rights actually do so.

While government initiatives in aligning patent regulation with innovation goals have been most visible in relation to publicly-financed research and development, it has not gone completely unnoticed that most expenditure on research and development, is made by the private sector.⁴⁸ The DST's 2012 ministerial report acknowledges that the 'private sector is the most important source of finance for, and performer of,

⁴⁴ See DTI 'Draft National Policy on Intellectual Property 2013 GN 918 of 2013 GG 36816 of 4 September 2013, 9.

⁴⁵ Teljeur (n23) 64, 50. There has, however, been some scholarly engagement on the effect in specific contexts. Lubango, for example, looks at the effect of strengthening the patent regime. Lubango L 'When can strong patent regimes boost countries stocks of inventions and related trade? An analytical model' (2015) 42 *Technology in Society* 150; Wynberg R, Silveston J & Lombard C 'Value adding in the Southern African natural products sector: How much do patents matter?' in WIPO (n23) 18 who conclude that in respect of natural products development: 'IPRs seldom restrict value adding, but may instead stimulate trade and may provide further commercial opportunities'. On how intellectual property strategy affects foreign partnerships, see Barnard H & Bromfield T 'The development and management of an intellectual property strategy in a developing country context: The case of Sasol' in WIPO (n23) 84.

⁴⁶ Kaplan (n24) 1, 4. See generally on the impact of intellectual property in South Africa, Ncube C 'Harnessing intellectual property for development: Some thoughts on an appropriate theoretical framework' (2013) 16 *PER* 370; Van der Walt L & Visagie P 'Moribund patenting industry now a national emergency' 2014 *Without Prejudice* 23.

⁴⁷ Pouris & Pouris (n24) 1.

⁴⁸ DST Ten-Year Plan (n6) 22.

R&D; it is a key strategic partner for government to engage in promoting R&D investment in the country'.⁴⁹ However, it added that '[g]overnment has little direct control over the private sector in respect of self-driven R&D, but plays a critical role in creating favourable framework conditions for product and process innovations, as well as steering to support mainstream policies and attain national objectives'.⁵⁰

Ultimately the question is whether patents can play a role in encouraging investment in innovation. Where private corporates do anticipate investment in the development of technology in South Africa, the nature of the investment will depend on the associated risk. In this context, the decision to use patents does not work to the public benefit through the diffusion of information and the availability of better products or processes, but through a reduction in the risk associated with investment in developing new technology. Patents are one strategy by which the results of costly inventive activity can be exploited without the risk of being copied by competitors.⁵¹ The value of the patent system for firms is therefore not as a driver of aggregate (national) innovation, but rather as a means of gaining a competitive advantage. This aligns with the conceptualisation of patents as individual incentives within the national quest to increase aggregate innovation.

In short, there is little to contest that the assumptions relating to the individual incentive function of patents can be a basis for examining the South African system.

3.3 THE CURRENT SOUTH AFRICAN PATENT SYSTEM

3.3.1 The Regulatory Context

The PA 1978 and its regulations are the only route by which a patent can be granted.⁵² It applies to all patents granted before or after its commencement, subject

⁴⁹ DST Report 2012 (n7) 140.

⁵⁰ *Id* 203.

⁵¹ See Visagie P 'Salmon fishing in the Kalahari' (2014) 14 *Without Prejudice* 22.

⁵² Assented to 26 April 1978 and commenced 1 January 1979, save for ss21 and 32(5) – see s95 PA 1978. Patent Regulations 1978 GN R2470 GG 6247 of 15 December 1978 (with effect from 1 January

to transition arrangements.⁵³ South Africa has a hybrid legal system, a legacy of past colonial relationships with the Dutch and the British, the latter being the dominant influence in respect of intellectual property law generally.⁵⁴ The first patent law after the Union of South Africa Act 1909 was the Patents, Designs, Trade Marks and Copyright Act ('PDTCA 1916').⁵⁵ The Patents Act of 1952 ('PA 1952') followed.⁵⁶ Both Acts were in effect incorporations of the British Patents and Designs Act of 1907, and the British Patents Act of 1949 respectively.⁵⁷ The PA 1978 was drafted in light of the EPC and follows the approach of the British Patents Act of 1977.⁵⁸

South Africa is a member both of the WIPO and the WTO, and an observer to the African Regional Industrial Property Organisation. Developments in these fora have a direct bearing on national developments.⁵⁹ South Africa acceded to the Paris Convention in 1947, and has adopted the Lisbon and Stockholm revisions.⁶⁰ The

1979). Last amendment GN R1226 GG 30593 of 14 December 2007 ('PA Reg'); Patents Examination Regulations 2003 GN 25 GG 24290 of 17 January 2003.

⁵³ PA 1978 s3; s39.

⁵⁴ See Steyn JR (updated by Tanziani) 'Patents' in *LAWSA* vol 20 (1) 2ed [148]. For more on the historical development of the South African patent laws, see van der Merwe A 'The Law of Patents' van der Merwe A (ed) *Law of Intellectual Property in South Africa* (2011). On the Roman-Dutch period see Burrell T *South African Patent and Design Law* (1999) 5; Steyn J 'The significance in South African patent law of the claims in a patent specification' published LLD Thesis (1974) Ch 2; 48-57, 56, 66; Gerntholtz R *Principles of South African Patent Law* (1971) 8-9.

⁵⁵ Act 9 of 1916.

⁵⁶ Act 37 of 1952.

⁵⁷ See van der Merwe A 'Introduction' in van der Merwe A (n54) . See also Burrell (n54) 5; Coulter M *Property in Ideas: the Patent Question in mid-Victorian Britain* (1991) 167 on the policy of the exclusion of the British patent statutes into the colonies which resulted in the colonies retaining their own patent laws.

⁵⁸ See Adams & Adams *Practitioner's Guide to Intellectual Property Law* (2011) 63; van der Merwe (n54) 268.

⁵⁹ See further Adams & Adams (n58) 28-29 for a discussion on government policy on accession to intellectual property treaties.

⁶⁰ South Africa acceded to the Paris Convention on 1 December 1947 and has since adopted the Lisbon (31 October 1958) revisions and the Stockholm (14 July 1967) revisions which entered into force for South Africa on 25 March 1975.

country has been a contracting state to the PCT since 16 March 1999,⁶¹ has acceded to the Budapest Treaty in 1997, and is a signatory to the IPIC Agreement.⁶² The patent system is considered substantially TRIPS-compliant through the PA 1978.⁶³

Domestically, the development of patent laws must conform to the principles of the Constitution of the Republic of South Africa, 1996, ('the Constitution').⁶⁴ The Constitution does not refer to intellectual property rights specifically, and there is no express right to intellectual property in the Bill of Rights. This has inevitably focused attention on whether section 25 of the Constitution recognises intellectual property rights as protected property.⁶⁵ It appears to be accepted that intellectual property rights qualify as constitutional property. In so far as employees may be affected, section 23 of the Constitution – the right to fair labour practices⁶⁶ and collective action⁶⁷ – and section 24 – freedom of trade, occupation and profession – form part of the context. In this thesis, I do not examine these Constitutional provisions further.⁶⁸

3.3.2 The Nature of the Patent Monopoly

The PA 1978 defines a patent as 'a certificate in the prescribed form to the effect that a patent for an invention has been granted in the Republic'.⁶⁹ The patent grants the

⁶¹ South Africa acceded to the PCT on 16 December 1998 and it entered into force on 16 March 1999.

⁶² South Africa ratified the IPIC Agreement on 21 September 1996 and it entered into force on 2 October 2005.

⁶³ See Intellectual Property Laws Amendment Act 38 of 1997; Gregory (n23) 19.

⁶⁴ Constitution of the Republic of South Africa, 1996.

⁶⁵ See, for example, Ncube (n46) 378; Tong L 'The interface between intellectual property rights and human rights' in van der Merwe (n54) 433; Van der Walt AJ & Shay R 'Constitutional analysis of intellectual property' (2014) 17 *PER* 52; du Bois M 'Intellectual property as a constitutional property rights: The South African approach' (2012) 24 *SA Merc LJ* 177; Dean O 'The case for the recognition of intellectual property in the Bill of Rights' 1997 (60) *THRHR* 105; Burrell (n54) 12-14.

⁶⁶ Constitution s23(1).

⁶⁷ Constitution s23(2) to (6).

⁶⁸ There has not been any legal attack on the constitutional validity of any of the intellectual property statutes.

⁶⁹ Section 2.

proprietor the right to exclude other persons from 'making, using, exercising, disposing or offering to dispose of, or importing the invention, so that he or she shall have and enjoy the whole profit and advantage accruing by reason of the invention'⁷⁰ for a non-renewable period of twenty years from the date of application.⁷¹ The patent and the rights in the pending application are assets in the estate of the patentee or applicant and may be assigned, licensed, or used as security.⁷² Section 59(1) of the PA 1978 provides that 'the rights vested in a patentee or an applicant for a patent shall be capable of *assignment* and of devolution by *operation of law*' (emphasis added).⁷³

An 'invention' is defined as 'an invention for which a patent may be granted under section 25'.⁷⁴ In the absence of a more useful explanation of the *quid pro quo* for the section 45 set of rights, regard must be had to the patentability criteria.⁷⁵ As under the TRIPS Agreement, these require an invention to be new,⁷⁶ to involve an inventive step,⁷⁷ and to be capable of use or application in trade, industry or agriculture.⁷⁸ The criteria point to the contribution recognised by the grant of first ownership in the patent. Applicants are required to disclose the invention sufficiently to enable a person skilled in the art to replicate it.⁷⁹ The TRIPS Agreement option requiring that the inventor disclose the best mode of carrying out the invention was removed from

⁷⁰ At s45.

⁷¹ PA 1978 s46(1).

⁷² See Burrell (n54) 109 for a discussion of the nature of the rights in an application for a patent as a *ius in personam ad rem acquirendam*.

⁷³ Section 59(1).

⁷⁴ PA 1978 s2. For a detailed understanding of how the definition of 'invention' developed historically, see Gerntholtz (n54) 24-39; Naidoo T 'Globalization and South African patent law' (2010) 2 *Point* 12-15.

⁷⁵ Certain contrivances are excluded from protection in line with the discretion provided for in the TRIPS Agreement. See PA 1978 s25(2)-(4). See further Burrell (n54) 45-53; Adams & Adams (n58) 66-70.

⁷⁶ PA 1978 s25(5); *Gentiruco AG v Firestone SA (Pty) Ltd* 1972 (1) SA 589 (A)

⁷⁷ See *Ensign-Brickford (South Africa) Ltd v AECL Explosives & Chemicals Ltd* 1998 BIP 271 (SCA); *Roman Roller CC v Speedmark Holdings (Pty) Ltd* 1996 (1) SA 405 (SCA).

⁷⁸ Patents Act s25(1).

⁷⁹ PA 1978 s32(3)(b).

the PA 1978 by the Patents Amendment Act of 2002.⁸⁰ However, because the Registrar does not examine the application substantively and there is no pre-grant opposition, compliance with the formal requirements suffices.⁸¹ The only way to remove a patent from the register is to have it declared invalid via revocation proceedings.⁸²

The system allocates first ownership on a first-to-file basis. The first applicant to file for the patent will have priority over subsequent filers,⁸³ and if the application is successful, that person will be recognised as the first 'owner' or proprietor of the patent.⁸⁴ However, the system only recognises two categories of applicant for the purpose of first ownership: 'the inventor or ... any other person acquiring from him the right to apply or by both such inventor and such other person';⁸⁵ and 'in the absence to an agreement to the contrary, joint inventors ... in equal undivided shares'.⁸⁶ There can be multiple, non-competing applicants for a single patent, in

⁸⁰ Patents Amendment Act, 2002, s32(2).

⁸¹ See PA 1978 s34 read with reg 40; Adams & Adams (n58) 66; Sibanda 2007 (n24) 27.

⁸² PA 1978 s61(1). The PDTCA 1916 (s27) and the PA 1952 (ss19 & 23) both allowed for interested parties to oppose the granting of the patent.

⁸³ PA 1978 s44(1) provides that a patent will be granted to the applicant. PA 1978 s2. The definition of 'applicant' includes 'the legal representative of a deceased applicant or of an applicant who is a person under legal disability'. See further Gertholtz (n54) 42.

⁸⁴ See PA 1978 s2 definition of 'patentee' as 'the person whose name is for the time being entered in the register as the name of the grantee or proprietor of a patent'.

⁸⁵ PA 1978 s27(1). The previous Patents Acts provided for substantively similar provisions, although they were more specific about the possible permutations of applicants. The PDTCA 1916 provided that '(1) The following persons, whether British subjects or not, may make application for a patent:-

- (a) The inventor either alone or jointly with one or more other persons; or
- (b) the inventor jointly with the assignee of a part interest in the invention; or
- (c) the assignee of the inventor either alone or jointly with one or more other persons' (s 14).

The 1952 legislation was not much different. Section 8 provided that an application for a patent in respect of an invention could be made

- '(a) by the inventor either alone or jointly with one or more other persons; or
- (b) by the assignee of the inventor to whom all the rights in the invention have been assigned, either alone or jointly with one or more other persons'.

⁸⁶ PA 1978 s27(2).

which case the applicants will each hold an undivided share in the application, the size of which would depend on the basis for their claim.

For both categories, inventorship forms the basis for recognition of first ownership. Non-inventors will be recognised only where they have acquired the right to apply from the inventor. This acquisition arises from an assignment of the right to apply by the inventor to any other person, including a juristic person;⁸⁷ or where the non-inventor has acquired the right by operation of law.⁸⁸ Regardless of how the rights are acquired, a non-inventor applicant must submit proof of title to apply; in effect, evidence of the legal chain linking the applicant to the inventor must be shown.⁸⁹ It is clear that the system operates on the basis that the inventor's contribution of a contrivance which meets the patentability criteria is the *quid pro quo* for registration and the control that comes with it.

A patent which is granted to a person not entitled to apply under section 27 can be revoked.⁹⁰ The grounds for revocation include that 'the patentee is not a person entitled to apply under s27',⁹¹ 'that the grant of the patent is in fraud of the rights of the applicant or any person under or through whom he claims',⁹² and 'that the prescribed declaration lodged in respect of the application for the patent...contains a false statement or representation which is material and which the patentee knew or ought reasonably to have known to be false at the time when the statement or representation was made'.⁹³

⁸⁷ PA 1978 s59(1). See van der Merwe (n54) 294.

⁸⁸ Section 59(2)

⁸⁹ PA 1978 s30(4), Patent Reg reg22(1).

⁹⁰ PA 1978 s61(1)(a). See du Plessis E 'Protecting your intellectual property at the research stage' (1993) 1 *Juta's Business Law* 152-3; Burrell (n54) 209.

⁹¹ PA 1978 s61(1)(a). However, these are substantive grounds and a 'false' statement which is more correctly a clerical error, would not be ground for revocation.

⁹² PA 1978 s61(1)(b).

⁹³ PA 1978 s61(1)(g). See *I O Tech Manufacturing (Pty) Ltd v Gallagher Group Ltd* (872/12) [2013] ZASCA 180 (29 November 2013). See also van der Merwe (n54) 323; Moerdyk C 'Fatal consequences' (2014) March *Without Prejudice* 44.

The Commissioner of Patents may resolve disputes as to parties' 'rights to obtain a patent for or to make, use, exercise or dispose of an invention, or as to the right to or title in a patent'.⁹⁴ Although the powers of the Commissioner are wide, there is no discretion for an order of entitlement other than on the basis of section 27.⁹⁵ In entitlement disputes over first ownership the party claims either on the basis of sole or joint inventorship, or as a non-inventor who has acquired title from the inventor. Under the PA 1952, specific provision was made for the resolution of disputes between employers and employees.⁹⁶ Section 63(2) provided that if

'either of the parties claims to be entitled, to the exclusion of the other, to the benefit of an invention made by the employee, the court or the commissioner may, unless satisfied that one or other of the parties is so entitled, by order provide for the apportionment between them of the benefit of the invention and of any patent granted or to be granted in respect thereof, in such manner as the court or the commissioner considers just'.⁹⁷

This provision was essentially a copy of section 56(2) of the British Patents Act 1949 which was interpreted very restrictively by the House of Lords in *Sterling Engineering Co Ltd v Patchett*⁹⁸ as not allowing the Comptroller to provide an equitable distribution. Weber noted while the provision was in force, that if this interpretation were followed in South Africa (at the time there were no cases in South Africa on the provision), the scope of the Commissioner's discretion to apportion the benefit would be limited to situations where the employer and employee had entered into an agreement to share the benefit but were at odds as to its interpretation.⁹⁹ In other words, it was not an apportionment to divide ownership rights.

In so far as the South African system implements article 4^{ter} of the Paris Convention, inventors are not expressly vested with a right to be mentioned as inventors in relation to the patented invention. At best, attribution is made indirectly through the formal requirements in the patent documentation filed at the Patent

⁹⁴ PA 1978 s28(1)-(2).

⁹⁵ *Id* s28.

⁹⁶ PA 1952 s63(1). See *Van Meeredevoot v Scaw Metal Products* 1955 BP 186 (CP).

⁹⁷ PA 1952 s63(2).

⁹⁸ [1955] 1 All ER 369. See further Chapter 5 on the British system.

⁹⁹ See Weber E 'Employees and patents' (1955) 72 SALJ 415-417.

Office which require that the inventor be identified. The registration process requires that the applicant complete the relevant forms, a number of which include his or her identity.¹⁰⁰ Where the Registrar finds that the application does not meet the formal requirements, he 'may refuse to accept the application or require the application or the specification which accompanied it to be amended in such a manner as may be necessary'.¹⁰¹ Presumably, the indication of the name of the inventor would be a critical requirement meaning that a patent cannot be issued unless the forms have been fully completed – although the regulations do allow a three-month period to remedy the fault.¹⁰² This means that regardless of the assignment of the patent, the identity of the inventor must be provided. It is clear that the PA 1978 focuses only on the economic rights of the patentee. Attribution is indirect, and it is unclear whether it is an inventor's right *per se*.

Further, the PA 1978 requires that a register be kept at the Patent Office reflecting the personal details of applicants, grantees, and inventors associated with the invention.¹⁰³ Whether or not this provision is sufficient to meet the obligations under article 4*ter* of the Paris Convention and its incorporation into the TRIPS Agreement is uncertain, although the answer is likely to be positive – albeit barely.

3.3.3 The Role of Inventorship in Allocating Ownership

The inventor is the touchstone for first ownership in the patent. The international paradigm in Chapter 2 posited that only the intellectual contribution of a natural person could be associated with inventorship, and does not recognise resource contributions by employers. This, in turn, has an effect on how the current system operates as an incentive mechanism. Although the PA 1978 does not limit first ownership to inventors, it does require the cooperation of the inventor in the sense that the application must be linked to the inventor's claim to the invention. The inventor also enjoys an ongoing association with the invention by being identified as

¹⁰⁰ See Form P2 (Register of Patents), Form P3 (Declaration and Power of Attorney), Form P6 (Provisional Specification), Form P7 (Complete Specification), Form P8 (Publication Particulars).

¹⁰¹ PA 1978 s35(1), Patent Regs 42, 43.

¹⁰² Patent Reg 43.

¹⁰³ PA 1978 s10(1)(a); See Pat Regs 4 and 5.

such in the patent. In order to understand the incentive effect of granting a patent, it is necessary to understand what inventorship entails in South Africa.

The PA 1978 does not define ‘inventor’ providing little more than that the ‘inventor’ is the person who invented the invention; and that an ‘invention’ is ‘an invention for which a patent may be granted under section 25’.¹⁰⁴ For du Plessis, the determination of the identity of the inventor is, therefore, a question of fact to be determined objectively.¹⁰⁵ Earlier patent statutes provided various definitions of ‘inventor’ the substance of which, however, was no clearer than under the current position.¹⁰⁶ Under the Cape Patents Act 17 of 1860, an importer qualified as an inventor – a reflection of the British influence from which the Act derived.¹⁰⁷ This changed when the first Union statute, the PDTCA 1916, provided that ‘inventor’ ‘shall not include a person importing an invention from outside the Union’.¹⁰⁸ This formulation was the result of the adoption of the Zuid Afrikaansche Republiek’s (ZAR) approach which was based on the US approach which emphasised the first and true inventor.¹⁰⁹ The definition of ‘inventor’ under the Patents Act 1952 ‘includes the legal representative of a deceased inventor or of an inventor who is a person under disability, but does not include a communicatee’,¹¹⁰ echoing the exclusion of an importer as an inventor. What is distinctive about this is that inventorship was deemed in the sense that not only the actual inventor fell under the definition, but also his or her legal representative in certain cases.

The only reported decision which specifically considered the substance of what it means to be an ‘inventor’ in the context of the PA 1978, is *Galison Manufacturing*

¹⁰⁴ Section 2 definition of ‘invention’.

¹⁰⁵ Du Plessis (n90) 154.

¹⁰⁶ For an account of how the definitions of ‘inventor’ and ‘invention’ have changed see Naidoo (n74) 12-15. See also on the historical development of the meaning of ‘invention’ in the South African statutes, Gerntholtz (n54) 28-30. Steyn (n54) 3-6 claim is the operative part of the patent to determine what the invention is.

¹⁰⁷ See *Kemp v Appleby and Co* (1865) 5 S 86. See also Burrell (n54) 55; see Steyn/Tanziani (n54) [159]; Gerntholtz (n54) 226-7.

¹⁰⁸ At s6.

¹⁰⁹ See Burrell (n54) 55-6; Steyn/Tanziani (n54) [159].

¹¹⁰ Act 37 of 1952 s1[vii].

*(Pty) Ltd v Set Point Industrial Technology (Pty) Ltd and another*¹¹¹ before the Commissioner of Patents.¹¹² The dispute involved entitlement to a patent for an invention for a mining hopper.¹¹³ The patent had been granted to Crause who had applied for it as sole inventor. A series of assignments resulted in the second defendant, Shock Proof Investments 82 (Pty) Ltd, becoming the patentee. The plaintiff, Galison, claimed proprietorship or co-proprietorship on the basis that its employees had acted in the 'course and scope of their employment', and that it had thereby acquired the right to apply for the patent.¹¹⁴

Set Point did not contest the claim that Galison would be entitled to apply for the patent if its employees were inventors, so limiting the issue for the court to whether Galison's employees were inventors for the purposes of section 27. The court, noting that '[t]he parties agree that there is no South African precedent dealing with this issue', and faced with an absence of judicial precedent on the determination of inventorship under the legislation,¹¹⁵ followed the British case of *Stanelco Fibre Optics Ltd's Applications*¹¹⁶ on the basis that '[t]he defendant's counsel does not contend that this statement is not appropriate on the facts of the present case and it will be accepted as the proper approach to be adopted to the dispute'.¹¹⁷ According to *Stanelco*, as quoted in *Galison v Set Point*, '[t]he task of the court is to identify the inventive concept of the patent or application and identify who devised it ... The court is not concerned with issues of validity or inventiveness: merely with the concept as described'.¹¹⁸

As to the first task, the court looked to the specification to determine the inventive concept and linked it to specific claims. It considered the differences introduced by

¹¹¹ 98/4753 [ZACCP] 1 (30 January 2009).

¹¹² See further Tanziani D & Dohmen D '*Galison Manufacturing Pty Ltd v Set Point Industrial Technology Pty Ltd: South Africa-patents-ownership*' (2009) 31 *EIPR* 75-77; Dohmen D 'Staking the correct ownership claim early' (2009) July *Without Prejudice* 24.

¹¹³ *Galison* (n110) para [10].

¹¹⁴ *Id* para [5]. This aspect is discussed below.

¹¹⁵ *Id* para [14].

¹¹⁶ [2005] RPC 15 (Ch D).

¹¹⁷ *Galison* (n110) [14]:

¹¹⁸ *Ibid*.

the new hopper, which it referred to as ‘the inventive concept’.¹¹⁹ It is submitted that, on this approach, the ‘inventive concept’ may be regarded as the contribution that would entitle the inventor to a patent. Since the patentee’s monopoly is defined by the claims, this approach eliminates persons who did not contribute to the invention. A logical extension is that the person must have contributed an essential integer, although no mention of integers was made in the case.

Next, the court identified the persons who had ‘devised’ the inventive concept. While the court references the English case as the basis for the use of ‘devisor’, it is not clear that it appreciated that the paragraph quoted was in the context of the statutory definition of ‘inventor’ under the British Patents Act 1977. In the British Act the inventor is defined as the ‘actual devisor’.¹²⁰ The reliance on this interpretation of ‘inventor’ as ‘devisor’ is not explained. Given the lack of precedent on the matter, the court’s comment that ‘[t]he defendant’s counsel does not contend that this statement is not appropriate on the facts of the present case’, could be construed as a significant, if not key, reason for the approach – as opposed to any other approach – being ‘accepted as the proper approach to be adopted to the dispute’.¹²¹ In *Galison* this entailed a factual enquiry into which parties were actually involved in causing the inclusion of the inventive concept in the patent.

However, the use of ‘devisor’ as a synonym for ‘inventor’ in South African secondary sources actually predates *Galison*. Tanziani notes, without providing any precedent, that ‘[t]he word “inventor” in relation to an inventor means the actual devisor of the invention’.¹²² While it is probably not problematic to identify the ‘devisor’, or even ‘actual devisor’ as the person entitled to the patent, without qualification the term is open to a broad interpretation which would widen the pool of persons recognised for patent purposes. This has implications not only for the potential increase in the number of persons able to assume the status of inventor, but also for whether or not inventorship will be limited to individuals directly involved in the intellectual process.

¹¹⁹ Id para [12].

¹²⁰ British Patents Act 1977 s7(3).

¹²¹ *Galison* (n110) para [12].

¹²² Tanziani D ‘Intellectual Property II’ *LexisNexis Online Forms and Precedents* (2009) [6]; See du Plessis (n90) 153.

What is clear is that to be an inventor or deviser, a form of engagement in relation to the inventive concept is required. However, what that engagement entails is unclear. According to du Plessis (prior to the decision) someone who merely offers ideas for an invention or assists by, for example, verifying information or carrying out specifically assigned tasks,¹²³ cannot be said to have devised the invention.

While this conceptualisation favours natural persons, it is not clear that a juristic person would inevitably be excluded as a deviser and hence inventor. The only bases for this would be if the Act sustained an approach which accepted title on the basis of an agency relationship with a natural person, or through a deeming provision much like that used in the definition of ‘author’ in the Copyright Act.¹²⁴ The issue has not been before the courts and the cases dealing with employee-inventions accept that it is the employee who is the inventor for purposes of the legislation. In *Galison*, for example, there was no allegation that the employer-firm was the inventor of the creation made by its employees. Academic sentiment also appears to favour the conceptualisation of inventorship being ascribed only to natural persons who make an intellectual contribution.¹²⁵

Steyn, writing before the PA 1978, stated that ‘[w]hen considering the full meaning of the phrase “true and first inventor” it should be borne in mind that only a natural person can be an “inventor”. The necessary creative mental activity can only originate with a natural person. This has been internationally recognised’.¹²⁶ Similarly Rattray, prior to the current Act, stated that

‘[i]t is accepted throughout South Africa that only a natural person can qualify as an inventor of an invention. An invention can only be conceived in the mind of a natural person who is hence the inventor thereof. It is through assignment of proprietary rights from the employee-inventor that the latter acquires ownership of the

¹²³ See du Plessis (n90) 153.

¹²⁴ Act 98 of 1978 discussed in Chapter 4.

¹²⁵ See, for example, Gertholtz (n83) 42.

¹²⁶ Steyn (n54) 14.

invention in question but the employee remains entitled to be cited as the inventor'.¹²⁷

His authority for this is limited to a single English case.¹²⁸ Van der Merwe clearly sums up the general approach that '[a]lthough inventors are natural persons, applicants can be either natural persons or juristic persons such as a company'.¹²⁹

Interestingly, one of Steyn's conclusions on the juridical nature of patents is that a natural inventor is unnecessary. He postulates that

'[a]s it is now clear that a patent right does not derive from some basic right of property of an inventor in his invention, it is quite permissible, if the well-being of a society demands this, to reform patent law so as to abolish the necessity of providing an assignment of invention from an individual natural person or persons to a company where a company is the applicant for a patent. In the large and increasingly more complicated manufacturing industry of the modern world with research departments involving numerous scientists pursuing [sic] research projects in closely co-ordinated groups, the identifying of some person or persons as being the "inventor" of the invention ultimately produced by such a co-operative research programme, is often nothing more than [sic] a mere fiction. Bearing in mind the basic nature of a patent right in law there is no reason why the prerogative power of the sovereign should not be exercised in granting patents to companies for corporate inventions without the need, in appropriate cases, of identifying individuals persons as inventors'.¹³⁰

Burrell, too, does not dismiss the notion out of hand but stops short of endorsing juristic inventorship. He notes that it

'often happens in large corporations today that teams work on a project in a field of sophisticated technology, with their work resulting in an invention. In such circumstances, and particularly where the project is completed only after a considerable period of time has elapsed, it can be difficult to determine precisely who the inventors are. Practically, the corporation may be regarded as the inventor

¹²⁷ Ratray C 'Rights of Employers in the Inventions of their employees' published LLM Thesis UNISA (1978) 3.

¹²⁸ Ratray (n127) 3. For the same position in England see *In the Matter of an Application for a Patent by SA du Generateur du Temple* 13 RPC 54.

¹²⁹ Van der Merwe (n54) 294.

¹³⁰ Steyn (n54) 103-104.

but, logically, it seems correct to say that a corporation cannot be said to invent in the ordinary sense of the word'.¹³¹ He makes the point, however, that certain statutes overcame the problem by deeming inventorship'.¹³²

Ultimately, conventional wisdom dictates that inventorship is limited to a natural person who has made the intellectual contribution constituting the inventive concept. There is no mention of the contribution of material resources or intellectual input less than that reflected in the inventive concept in the claims. This formulation would not recognise a corporation for its contribution of resources, nor has it been suggested in the primary sources that a corporation could claim to be an inventor indirectly through the intellectual contribution of a natural person (for example as agent). In this respect, the South African system reflects the international approach to inventorship.

3.4 INVENTORSHIP AND OWNERSHIP OF EMPLOYEE-INVENTIONS

3.4.1 General

This section continues the exposition of the current patent system but analyses how inventorship and ownership are determined between the employer and employee-inventor. As discussed, the PA 1978 limits applications to inventors or persons 'acquiring from "the inventor" the right to apply'.¹³³ These two bases for the recognition of contributions from the employee and the employer are analysed and inform the conclusions about the alignment of the system to its purpose which close this chapter. The absence of explicit first-ownership rules in this situation,¹³⁴ and the ambivalence in the few reported cases, result in an analysis which relies heavily in

¹³¹ Burrell (n54) 56.

¹³² Ibid, '[t]he legislature however, appears to take a different view if its definition in the Standards Act 29 of 1993, of the South African Bureau of Standards being deemed to be an inventor is to be any guide'.

¹³³ PA 1978 s27(1).

¹³⁴ Du Plessis (n90) 152: 'If an employee did [invent], the question is whether ownership of the information vests in the employee or in the employer. The Patents Act offers no help in this situation'; also Visser (n36) 363.

places on lengthy extracts, simply to avoid conjecture in the absence of definitive rules.

3.4.2 Entitlement by virtue of Inventorship

Section 27(1) provides that the inventor is entitled to apply for the patent. In the PA 1978 inventorship follows the conventional route which limits it to natural persons who have made the required intellectual contributions. Consequently, the employee who has made the requisite intellectual contribution will be recognised on this basis. However, the employer's claim to applicant status on the basis of inventorship, requires an expansion of inventorship to include investment and to accommodate juristic inventorship. It is submitted that although there is little by way of case law to completely scupper attempts at such expansion, such an interpretation would be unlikely and instead, the employer would have to acquire the right to apply from the employee. This is discussed next.

3.4.3 Entitlement through Acquisition from the Inventor

3.4.3.1 General

Section 27 (1) provides that a non-inventors may apply for a patent provided that they have acquired the right to do so from the inventor. Therefore, although the Act acknowledges inventorship as the basis for the grant of the patent, it anticipates circumstances where persons other than the inventor ought to be vested with first ownership in the patent. The bases which may give rise to such a transfer of first applicant status reflect contributions supplementary to actual inventorship which the system is also willing to recognise.

Where the employee is the inventor, the employer's title to apply for the patent depends on its having acquired the right from the employee-inventor. As indicated previously, the patent and the rights in the application are assets which may be assigned, licensed, or used as security. Under section 59(1) of the PA 1978 these

rights are 'capable of assignment and of devolution by operation of law'.¹³⁵ Therefore, the only way for an employer to acquire the rights from an employee-inventor are through assignment by the employee or by devolution of rights through operation of the law.

3.4.3.2 Employers' acquisition by assignment

Although an assignment in the context of patent law is more correctly a cession, this use of the term is standard in the field.¹³⁶ Section 60(1) provides that the 'applicant for a patent or a patentee may in writing assign his rights in an application or patent to any other person'¹³⁷ and that '[u]nless such assignment is so recorded it shall not be valid, except as between the parties thereto'.¹³⁸ Consequently, an oral assignment does not transfer rights even though at common law an oral assignment is generally valid.¹³⁹ Even the reduction of the agreement to writing would transfer rights only between the parties. It is only when the Registrar has recorded the written assignment that it will have any effect on third parties. Such assignments need not comply with any specific form in order to be registered, nor, according to Van der Merwe, do they need to be signed.¹⁴⁰ The regulations to the Act simply require 'assignment or other proof, to the satisfaction of the registrar, of the right of the applicant to apply'.¹⁴¹

In the employment situation, the underlying basis for the assignment is contractual and can relate to a specific invention or to employee-made inventions generally. The validity of the assignment 'requires only a reasonable cause and need not be

¹³⁵ Section 59(1).

¹³⁶ See further van der Merwe (n54) 313; *Insolvent Estate Dapino v The Automatic Pit Company Ltd* (1907) 24 SC 480.

¹³⁷ PA 1978 s60(1)(a). See in respect of the Cape Patents Act 1860 that an unconditional assignment 'transfers ownership at once' *Insolvent Estate Dapino* (n136) 485-7. See *Souter v Norris* 1933 AD 41 on the position under the 1916 Act.

¹³⁸ Section 60(1)(b)-(c).

¹³⁹ See *MDB Animal Health (Pty) Ltd v Monsanto Company* 2003 BIP 47 (SCA) 49G-50B. See Steyn/Tanziani (n54) [177].

¹⁴⁰ Van der Merwe (n54) 313.

¹⁴¹ Patent Regulations 1978 reg 22(1)(d).

accompanied by a *quid pro quo*'.¹⁴² As there is no set form both a specific or a more general written agreement would meet the formal requirement. In these written instruments, the assignment can be express or, as Van der Merwe indicates, tacit.¹⁴³ In the latter instance, the common-law rules relating to tacit terms determine the existence of an assignment in the contract.¹⁴⁴

There appear to be only two reported cases in which the written assignment of employee-inventions to employers has attracted attention. Neither is particularly illuminating but both serve as examples of what could constitute a written assignment. *Plessey South Africa (Ltd) v Colin Victor Fellowes*,¹⁴⁵ an application under section 63 of the PA 1952, turned on the validity of a provision in the employment contract governing ownership in intellectual property made by the employee. Here Fellowes had made integrated circuits while employed as a sales engineer by Plessey. It was standard for Plessey's employees who held positions of trust, such as that of sales engineer, to agree to the terms of its 'Secrecy-Patents' document when taking up employment. Fellowes had signed the document but now contested that it in fact constituted an assignment. The document stated that

'[e]very such improvement, invention and discovery shall become the sole and absolute property of Plessey. The employee at any time, whether during his period of employment hereunder or thereafter, when required by Plessey and at Plessey's expense, shall do and execute all acts, deed and things which may be required to enable Plessey to obtain the fullest benefit and advantage from each such improvement, invention...'.¹⁴⁶

Although the term 'assignment' is not used, it is not difficult to find that the assignment was included tacitly. In this case, however, Fellowes claimed that he

¹⁴² Van der Merwe (n54) 313.

¹⁴³ Id 31; Hutchison D & du Bois F 'Contracts in general' in du Bois F (ed) *Wille's Principles of South African Law* 9ed (2010) 800: 'One general question concerns the effect of a contract being reduced to writing. An "entire agreement" or "integration" clause in a contract has been said not to preclude the existence of a tacit term, and it seems this also holds good when a statute requires the terms of a contract to be in writing'; *Wilkins v Voges* 1994 (3) SA 130 (A).

¹⁴⁴ Tacit terms are discussed below in relation to devolution by operation of law.

¹⁴⁵ 1976 BP 566.

¹⁴⁶ Id 571.

had signed the agreement under duress and that as such it was invalid. His alternate claim was that Plessey had waived its rights to the patent by not assisting him to make the patent application. Both defences were dismissed.

In *El Du Pont De Nemours and Company v SA Nylon Spinners (Pty) Ltd*¹⁴⁷ the main prayer was for an extension of the term of the patent on the basis that the patentee had not derived adequate remuneration from it. A side issue related to whether the patentee's acquisition of the rights to the invention had been through a proper assignment from its employee. The clause in question read:

‘Any and all improvements and inventions conceived or made by the Employer [sic] during the period of his said employment, relating in any way to the activities or business of the Employer, shall be disclosed promptly to the Employer and shall be the sole and exclusive property of the Employer or its nominee’.¹⁴⁸

It was conceded that the specific provisions in the contract of employment constituted a proper assignment so it was unnecessary for a further assignment to have been filed.

The use of an assignment to transfer the right to apply for the patent in this way is, however, limited by section 59(2) of the PA 1978 which explicitly restricts the assignment of employee-inventions.¹⁴⁹ Although not a first-ownership allocation as such, it is important for the effect it has on the possibility of the employer claiming first ownership. It must be noted that this is the only reference to the employment context in the Act.

Section 59(2) provides as follows:

‘[a]ny condition in a contract of employment which
(a) requires an employee to assign to his employer an invention made by him otherwise than within the course and scope of his employment; or

¹⁴⁷ 1987 BP 282 (CP).

¹⁴⁸ Id 288.

¹⁴⁹ See Truluck C ‘IP developed by employees – who owns what?’ (2015) (November) *Without Prejudice* 20 that assignment is the only basis for employer-ownership

(b) restricts the right of an employee in an invention made by him more than one year after the termination of the contract of employment, shall be null and void'.¹⁵⁰

For purposes of this thesis, only section 59(2)(a) will be examined for its effect on assignment.

Contracts of employment are entered into at the start of the employment relationship. Practically, the provision will apply predominantly to so-called pre-invention assignments, namely those which relate to inventions which have yet to be made, although it is broad enough to apply to inventions already existing at the inception of the contract. Since such a term in the contract between the employer and employee is invalid, it is submitted that any subsequent assignment based on the contract of employment as the reasonable cause, would be void. In the absence of reported case law on the operation of section 59(2)(a), that effect will depend on the interpretation of a number of key elements in the provision.

Section 59(2)(a) relates to conditions which are part of a 'contract of employment' between the parties. It ought, therefore, to be possible to avoid the application of the provision if the legal cause is *not* a condition in the employment contract.¹⁵¹ This approach turns on the interpretation of the provision, and in particular the 'contract of employment' - which is not explained. In the patent context at hand, a very inclusive approach to 'contract of employment', and so also to 'employee', will increase the likelihood of an invention being excluded from the employer's reach. A narrow construction means more inventions will fall outside the 'contract of employment' and thus be unprotected. In the absence of explanatory guidelines in the Act and no judicial consideration of these terms in this specific context, it is not possible to offer a definitive interpretation.

However, if the matter comes before the courts, they will most likely canvas statute and case law where the terms have been used. The difficulty with this approach lies

¹⁵⁰ See Moubray H 'Contracts of employment – the effect of section 59(2) of the Patents Act, No. 57 of 1978 on ownership of inventions made by employees' (1990) December *SAIPL Newsletter* 3.

¹⁵¹ See further Tong L 'Employee-made intellectual property: Statutory considerations for the contractual regulation of ownership' (2015) 36 *Industrial Law Journal* 870.

in identifying appropriate sources outside of the PA 1978. So, for example, the statutory definitions of 'employee' in the Basic Conditions of Employment Act ('BCEA')¹⁵² and the Labour Relations Act ('LRA')¹⁵³ are wider than under common law, primarily as a result of the policy considerations underlying the legislation. Consequently, the basis on which to classify an inventor as an employee for the purposes of the labour legislation will not necessarily coincide with that of section 59(2) of the PA 1978. The role of labour policy is explored in 3.5.

The term 'contract of service' arises in section 21 of the Copyright Act 98 of 1978 which deals with first ownership in copyright and it is tempting to rely on the copyright approach. In that context, the term is interpreted as an ongoing employment relationship in the nature of the *locatio conductio operarum* as distinguished from a *locatio conductio operis*.¹⁵⁴ However, section 21 serves to deviate from the standard rule to take the role of the employer into account, whereas its use in section 59(2) is to restrict the employer's reach. The appropriateness must therefore be questioned in light of the differing policy considerations.

Assuming that the basis for the assignment is a condition in the employment contract, the limitation only applies to those inventions which do not fall within the 'course and scope' of the inventor's employment. Therefore, a condition in a contract of employment that the employer will own an invention made by the employee within the course and scope of his or her employment, is acceptable and constitutes a legitimate basis for the acquisition of the right to apply.¹⁵⁵ Once again, a narrow or broad construction will affect the ambit of the application. Consequently, even though a broad construction of 'contract of employment' brings more inventions within the possible exclusionary effect of section 59(2)(a), a broad interpretation of 'course and scope' increases the range of inventions which the employer can require the employee-inventor to assign.

¹⁵² Act 75 of 1997.

¹⁵³ Act 66 of 1995.

¹⁵⁴ Du Plessis (n90) 153. See 4.3. below.

¹⁵⁵ For a discussion of the practical implementation of this specific aspect, see du Plessis (n90) 152.

This phrase, and various incarnations of it, such as ‘course of employment’ and ‘scope of employment’ have arisen in other contexts, most notably delict and copyright. Consequently, commentary on how to interpret the provision, in the absence of decisions on point, tends to resort to areas of law other than patent.¹⁵⁶

Burrell argues that the phrase can be equated with ‘sphere of employment’ or simply ‘related to his work’, and that a distinction should not be made between ‘course’ and ‘scope’.¹⁵⁷ He bases this argument on the approach of vicarious liability, and then suggests the following as a practical approach to the issue:

‘Suppose the employee had been directed by his employer to apply his energies to the inventive concept in issue and had refused to do so, would the employee, in that event, be in breach of his contract of employment or in breach of a duty towards his employer? If the answer to the question is in the affirmative, the invention would in most cases have been made in the course and scope of the employer’s employment’.¹⁵⁸

The inherent difficulty in trying to draw the boundaries is evident from his concession that this approach would ‘in most cases’ lead to the outcome, thereby begging the question: When would it not lead to the outcome?

Du Plessis adopts a more literal (and consequently narrower) approach. She considers ‘course’ and ‘scope’ to be separate components of the requirement in section 59(2)(a) and does not resort to vicarious liability. The enquiry is simply a ‘matter of fact’.¹⁵⁹ Factors which may be taken into account to determine whether an activity falls within the course of employment include ‘whether the work was made during working hours’, ‘whether it was made in the employer’s premises’, and ‘whether it was made with the employer’s equipment’.¹⁶⁰ She distinguishes this from the scope of employment which requires that one ‘refer to the duties for which the employee was appointed’ which are gleaned from the job description.¹⁶¹ On this

¹⁵⁶ For commentary on this provision see Bramson L & Hooper T ‘Who owns what’ (2007) *Without Prejudice* 25-6; Moubray (n150) 3-4.

¹⁵⁷ Burrell 1999 (n54) 291.

¹⁵⁸ *Id* 292.

¹⁵⁹ Du Plessis (n90) 153.

¹⁶⁰ *Ibid*.

¹⁶¹ *Ibid*.

basis, the absence of either the course or the scope would render a condition to assign the invention to the employer, null and void. Merry and Vally also appear to regard the terminology as intentional.¹⁶²

Van der Merwe appears to agree with Burrell that the correct approach is to equate the phrase 'course and scope of employment' with 'sphere of employment', although he, like du Plessis, avoids *delict* as the basis.¹⁶³ However, he seems to contemplate 'sphere' to mean something narrower than a mere relation to the work of the employee in that it requires the inventiveness to be part of the employee's duties. His approach, worth repeating in full, is that

'related to the work, seems realistic. A distinction can perhaps be drawn between the situation in which an employee makes an invention in his sphere of employment by way of a more or less run-of-the-mill occurrence and that in which the application of an inventive faculty forms at least by implication part of the sphere of employment as is the case with, say, employed researchers. It seems clear that, in the latter situation at least, the employer is entitled to the rights to an invention made by the employee. As regards inventions made by way of a run-of-the-mill occurrence – such as a miner's making an invention that can be used in underground mining operations - the rights may more readily accrue to the employee as the invention was not made within the 'sphere' of employment, which in the case of the miner requires the miner to do mining work (footnotes omitted)'.¹⁶⁴

It is evident that in the absence of judicial scrutiny, the true effect of section 59(2)(a) remains uncertain. However, what is clear is the necessity to determine the scope of the provision in light of its link to the employment relationship. How one determines whether the assignment is as a consequence of a condition in the contract of employment, will depend on the approach to interpretation, which in turn ought to be one which arises as a consequence of the policy underlying the provision.

The best approach is to start from policy considerations. Although these are not expressly stated in the provisions, the effect of the restriction is to temper the use of

¹⁶² Merry R & Vally M 'Employing intellectual property wisely' (2013) December *De Rebus* 29.

¹⁶³ Van der Merwe (n54) 316.

¹⁶⁴ *Id* 316-7.

contract by the employer to divest the employee of ownership where the invention bears no relation to the employment relationship. It is assumed that the contract of employment refers to a work relationship which creates the danger of the employee losing ownership when he or she ought not to assign it. It would make no sense otherwise to restrict the employee's ability to decide whether or not to agree to an assignment. This resonates with the general objectives of labour law policy to protect employees from contracting on unfavourable terms with employers.

The provision does not prohibit an agreement to assign an invention made outside the course of employment after the invention has been made – in other words, not as a condition in the employment contract.

3.4.3.3 Acquisition of rights by operation of law

3.4.3.3.1 Introduction

There is no elaboration of the meaning of 'operation of law' and it is submitted that in this context it refers to little more than that the rights may be vested in a person as a consequence of a statutory enactment or common-law rule to that effect.¹⁶⁵ The distinction is between the written assignment which arises as a consequence of an underlying agreement between the employer and employee, and the vesting of the right to apply in the employer by law in the absence such an assignment.

In terms of the regulations to the Act, proof of the acquisition must be submitted to the satisfaction of the Registrar, although its form is not prescribed. It is submitted that the devolution would either be implied by statute or by the common law, or may arise as a tacit term in the contract. While the term 'operation of law' is more commonly associated with the former basis,¹⁶⁶ this discussion adopts a broader approach to include the tacit terms on the basis that at common law they are a

¹⁶⁵ The law of succession is one example. See also *Chauvier NO v Universal Pool Products* 1991 BP 70 (CP).

¹⁶⁶ See, for example, *SA Maritime Safety Authority v McKenzie* 2010 (3) SA 601 ('McKenzie') para [11].

legally recognised way of creating obligations between parties.¹⁶⁷ The following principles underlie the ensuing discussion.

An implied term is described in *South African Maritime Safety Authority v McKenzie* as 'a term that is introduced into the contract as a matter of course by operation of law, either the common law, trade usage or custom, or statute, as an invariable feature of such a contract, subject only to the parties' entitlement in certain, but not all, instances to vary it by agreement'.¹⁶⁸ In this case, 'the intention of the parties will not come into the picture and the issue is purely a legal one, of whether in those circumstances in relation to a contract of that particular type the law imposes such a term on the parties as part of their contract'.¹⁶⁹ Reliance on an implied term means that it is a legal question whether or not there has been a transfer of the right to apply from the employer to the employee.

Whereas the intention of the parties to include implied terms in their relationship is irrelevant to that imposition, it does arise in the context of tacit terms. Here the consideration is 'the presumed intention of the parties to a particular contract'.¹⁷⁰ The recognised test is that of the 'bystander' or 'officious bystander',¹⁷¹ and refers to those terms in the contract to which the parties agreed but which, for whatever reason, were not expressed. As stated in *McKenzie* it

¹⁶⁷ In the case that a tacit term has been found to exist, it will be to the effect that the parties had intended that there would be a transfer of the rights; in which case a written assignment would be needed to complete the transaction for the purposes of the PA 1978. As indicated previously, the assignment could be express or tacit in the written instrument. Where the party refuses to assign, this would likely be treated as a breach of the contract.

¹⁶⁸ Id para [11]. See also *City of Cape Town (CMC Administration) v Bourbon-Leftley & another NNO* 2006 (3) SA 488 (SCA). On the distinction between trade usage as custom versus a tacit term, see *Totalgaz Southern Africa (Pty) Ltd v Solgas (Pty) Ltd & another; Easigas (Pty) Ltd v Solgas (Pty) Ltd & another (No 2)* 2009 BIP 347 (W) paras [29]-[34]. See also *Alfred McAlpine & Son (Pty) Ltd v Transvaal Provincial Administration* 1974 (3) SA 506 (A) 531.

¹⁶⁹ *McKenzie* (n166) para [11]. See also *Bredenkamp v Standard Bank* (599/09) [2010] ZASCA 75 (27 May 2010) para [6].

¹⁷⁰ *Bredenkamp* (n164) para [6].

¹⁷¹ *De Lange v ABSA Makelaars* (262/09) [2010] ZASCA 21 (23 March 2010) para [21]. See further du Bois (n143) 799.

'arises from the actual or imputed intention of the parties as representing what they intended should be the contractual position in a particular situation, or where they did not address their minds to that situation, what it is inferred they would have intended had they applied their minds to the question'.¹⁷²

The term is implied on the facts. Therefore, the employer must show that on the facts of the matter, the presumed intention of the parties was that the employer owns the invention. According to du Plessis, [c]ircumstances which would point to a tacit term that the intellectual property produced by an employee should belong to his employer include provisions that the employee was employed to do research, develop new techniques and design new products'.¹⁷³

The following analysis of the application of this provision as a basis for the allocation of ownership in employee-inventions, starts with a consideration of whether the employer can rely on an *implied term* derived from statute. The obvious situations are where ownership devolves in terms of the relevant statutes as a consequence of the patentee's death or insolvency.¹⁷⁴ In this case, I analyse the PA 1978 to determine whether it is the source of an implied term.¹⁷⁵

This is followed by a discussion of the common law as authority for an *implied term* transferring the right to apply to the employer, and as the vehicle for the recognition of *tacit terms* which regulate ownership in inventions. The reason for combining the common-law discussion is that the very few reported cases which deal with patentable employee-inventions do not expressly indicate the basis on which title is being claimed by the employer and, in order to avoid conjecture as to whether they are evidence of an implied or tacit term, they are each considered as fully as is possible given the available details.

¹⁷² McKenzie (n166) paras [11]-[12].

¹⁷³ See also du Plessis (n 90) 153. See, for example, *Brown NO v Simmons* 1947 (4) SA 108 (SR) 115.

¹⁷⁴ For example, the Copyright Act 98 of 1978 provides in s22(1) that copyright can be transferred by assignment, testamentary disposition and operation of law. It is submitted that the term 'operation of law' would include testamentary disposition.

¹⁷⁵ The IPPFRD Act, which is more obviously an example of devolution by operation of statutory law, will be discussed in the next chapter as it does not apply to the private sector inventions here addressed. See Chapter 4.

3.4.3.3.2 *Implied by statute: PA 1978*

There is no explicit statutory enactment in the PA 1978 giving employers the right to apply for patents for their employees' inventions. The only reference to the employment context is section 59(2) and there is conflicting opinion as to its effect as a statutory devolution.

According to Burrell, the legislature's approach to entitlement to employee-inventions is evident from section 59(2)(a). In Burrell's 1985 edition of *South African Patent Law and Practice*, the author was of the view that the

'approach of the legislature which appears to emerge from s59(2)(a)...is that an invention made by an employee within the course and scope of his employment would rightfully be the property of the employer provided that a contract to that effect is in existence. This indeed would appear to be the correct approach in South African patent law'.¹⁷⁶

According to him, this implies a two-pronged enquiry: 'whether the invention was made by the employee within the course and scope of his employment', and 'whether there was a contractual relationship between the employee and the employer entitling the employer to rights in respect of the invention'.¹⁷⁷ He cites *Morewear Industries (Rhodesia) (Private) Limited v William Michie Irvine*¹⁷⁸ as authority. It is not entirely clear that he is indeed advocating that the effect of s59(2) is that the rights devolve on the employer in terms of the PA 1978. His contention can also be read simply as a repetition of section 59(2)(a) – that it is possible for the employer to acquire employee-inventions through assignment provided that assignments of the type referred to in s59(2)(a) are prohibited. In other words, there still has to be an assignment from the employee to the employer of inventions made in the course of employment.

However, in the 1999 edition of his work, the entry has changed to read that the

¹⁷⁶ Burrell T *South African Patent Law and Practice* 2ed (1985) 320.

¹⁷⁷ Id 320.

¹⁷⁸ 1960 BP 202 (RPT).

‘approach of the legislature which emerges from section 59(2)(a)...is that an invention made by an employee within the course and scope of his employment would rightfully be the property of the employer. This is but a reflection of the position on common-law principles. The enquiry is two-fold: first, whether the invention was made by the employee within the course and scope of his employment and, second, whether there was a contractual relationship between the employee and the employer entitling the employee to rights in respect of the invention, notwithstanding that the invention was made in the course of his duty as an employee’.¹⁷⁹

The reference to ‘provided a contract to that effect exists’ has been removed. He seems to be saying the position implied by the legislature is the same as that at common law. It is submitted that it requires a very strained reading of section 59(2)(a) to regard it, in its current form, as a legislative provision to that effect, and furthermore, there is in fact no clear authority as to the common-law position in South Africa.

In 1993, du Plessis did not see section 59(2) as an implied rule for devolution in favour of the employer. She noted with regard to ownership of employee-inventions, that

‘[t]he Patents Act offers no help in this situation. Generally, it seems that two requirements must be satisfied if an invention made by an employee is to belong to his employer: there must be a contract between employer and employee providing for ownership in inventions made by the employee to pass to the employer; and the invention must have been made within the course and scope of the employee’s employment’.¹⁸⁰

However, in a 2004 report on ownership of employee-inventions in South Africa, du Plessis put forward the view that ‘[f]rom this provision [s 59(2)(a)] it seems that the approach of the legislature is that an invention made by an employee within the

¹⁷⁹ Burrell (n54) 290.

¹⁸⁰ Du Plessis (n90) 152.

course and scope of his/her employment would rightfully be the property of the employer'.¹⁸¹ The report continues that

'[h]owever, the Patents Act does not contain a provision which expressly *ex lege* attributes the invention made by an employee within the course and scope of his/her employment to the employer. In practice employers in South Africa are advised to include appropriate clauses in employment contracts or regulations or institutional rules of statutes'.¹⁸²

It would seem that if the legislation is indeed to be interpreted to mean that the invention belongs to the employer, there ought to be no need for employers also to rely on contract.

Van der Merwe is less ambiguous and ambivalent. His view - section 59(2)(a) plays no role where the contract of employment does not deal with ownership of inventions - is to be preferred.¹⁸³ His approach to section 59(2)(a) is that

'[w]hen an invention is not made during the course and scope of employment, a condition in a contract of employment that grants the employer rights in that invention is invalid (null and void). The converse is that a condition in a contract that gives the employer the right to inventions made or realized in the course and scope of an employee's employment is valid. As employment is contractually regulated, a logical deduction is that, when a contract of employment does not deal with rights to inventions, the employer cannot claim any right to inventions made during the course and scope of the inventor's employment'.¹⁸⁴

Furthermore, the opinion of the Supreme Court of Appeal in *King* that '[p]resumably the common-law approach still applies to South African patents since the current Patents Act 57 of 1978 does not deal with patents by employees',¹⁸⁵ seems to prefer

¹⁸¹ Du Plessis E 'Employers' rights to intellectual property' Report Q183 South Africa Group AIPPI 2004 3.

¹⁸² Ibid.

¹⁸³ In other words, where it has not been dealt with whether by express or tacit terms of the employment contract. Van der Merwe (n54) 317.

¹⁸⁴ Van der Merwe (n54) 317.

¹⁸⁵ Para [14] n7.

view that a rule relating to the ownership of employee-inventions (patentable or not) must be sought in the common law, not the PA 1978.

In conclusion, it is submitted that the PA 1978 does not imply a statutory rule which devolves the right to apply for a patent on the employer.

3.4.3.3.3 *Acquisition by common law: Implied rules and tacit terms*

We now turn to whether the common law may serve as the basis for the acquisition of rights by the employer, through either an implied term or a tacit term in the employment agreement.

Neither the Supreme Court of Appeal nor its predecessor courts has fully considered the ownership of patentable employee-inventions; the closest the Supreme Court of Appeal has come to dealing with the matter is in a footnote to *King v SA Weather Service*.¹⁸⁶ The court rejected a submission that the phrase ‘course of employment’ in section 21 of the CA 1978 should be interpreted restrictively to mean ‘in terms of the employment contract’. Harms JA’s view was that the

‘submission may have had some merit had the [Copyright] Act provided as s39 of the British Patents Act 1977 provides, namely that the employer is the owner of an invention made “in the course of” the “normal duties” of the employee. This provision changed the common-law test, which does not refer to “normal duties” but it retained the “in the course of” requirement’.¹⁸⁷

In a footnote to this sentence, the judge notes that: ‘Presumably the common-law approach still applies to South African patents since the current Patents Act 57 of 1978 does not deal with patents by employees’.¹⁸⁸ This is the sum total of the reference. There is no mention of the English common law rule referred to having been accepted as part of the South African law in any South African case. The sentence itself is somewhat ambiguous as there is no reason why the English

¹⁸⁶ (716/2007) [2008] ZASCA 143 (27 November 2008) para [14] n7.

¹⁸⁷ Para [14].

¹⁸⁸ Id n7.

common-law provision should automatically apply. In any event, the reference in this case is *obiter* and, in itself, is not binding precedent.

What follows is a chronological investigation of the available reported case law to determine whether any of the cases are precedent for a South African common-law position that there is an implied allocation rule, or are examples of how tacit terms may be read into the contract and thus serve as a basis for employer-acquisition. Regrettably, the paucity of detail necessitates lengthy reproduction of parts of the cases for the sake of clarity.

One of the earliest cases in the South African literature on ownership of employee-inventions is *Brown NO v Simmons*.¹⁸⁹ *Brown* was an application under the Rhodesian Patents Act before the Southern Rhodesian Court in Salisbury for the revocation of a patent for an invention involving furnaces.¹⁹⁰ The respondent, Simmons, had been employed by the applicant, Brown, as part of an effort 'to get the services of an engineer interested and experienced in the question of thermal efficiency of furnaces to supervise experiments'.¹⁹¹ Brown wanted Simmons performs tests to determine the comparative efficiency of four different types of furnaces.¹⁹² One of the furnaces was not available and, upon Simmons' request, Brown authorised him to use a furnace which he (Simmons) had designed. Simmons applied for, and was granted a patent on the furnace.

Brown sought, unsuccessfully, to revoke the patent for lack of novelty and inventiveness. The alternate claim was that Simmons had made the invention while performing work he was employed to do and that as such, Brown ought to be co-patentee. Although the court expressed doubt as to the (procedural) correctness of

¹⁸⁹ Note 173. This case appears, for example, in Ramsden P *A Guide to Intellectual Property Law* (2011) simply as an example of a claim of joint ownership (267-9); Gerntholtz R 'Inventions of Employees' (1968) 1 *CILSA* 249. McBride V 'Patent ownership: Rights to employee inventions' published LLM Thesis UNISA (1991) 22 regards it as the 'only precedent in South Africa to provide guidance on employee inventions'; Burrell (n54) 291.

¹⁹⁰ *Brown* (n173) 111.

¹⁹¹ *Id* 110.

¹⁹² *Ibid*.

this claim,¹⁹³ it nonetheless rejected the claim on the basis that the evidence showed that the Simmons

‘respondent was employed for the sole purpose of carrying out tests as to the comparative efficiency of various types of furnaces. He was not asked to conduct experiments with a view to designing a better type of furnace and it was only because one of the furnaces which it proposed to test was not available that he was given permission, at his own request, to install and test a furnace designed by himself. It is true that he built the Eureka [furnace] while employed by the board, presumably at the board’s expense, and that he furnished reports on it. But the designing of furnaces was not part of his employment and it cannot properly be said that he evolved the Eureka while doing work and conducting experiments along the lines which his employer had employed him for and directed him to follow’.¹⁹⁴

This paragraph is all that the court had to say on this point. It does not deal specifically with the nature of the relationship between the parties, and while it may well be that the employment referred to was an ongoing contract, it appears that Simmons was employed for a very specific task. There is nothing to suggest that the court’s interpretation was based on an implied term, or that it was reading in a tacit term in light of the particular facts. In any event, as authority for a common-law implied term, it is submitted that as a Rhodesian case it has weak (if any) precedent value in South Africa today.

Interestingly, Gerntholtz says of *Brown* that ‘[i]t was held that in the absence of an express agreement all rights in an invention, made by an employee in the course of his employment, belong to the employer if made in the course of the employee’s employment’.¹⁹⁵ It is submitted that the case is not authority for so broad a statement, or even for an implied term.¹⁹⁶

Rattray appears to regard the case as of value to South Africa because the ‘influence of English law on the development of South African law hardly needs

¹⁹³ Id 115: ‘I am by no means certain that such claim is properly included in these proceedings’.

¹⁹⁴ Ibid.

¹⁹⁵ Gerntholtz (n54) 231.

¹⁹⁶ See also Rattray (n127) 160.

emphasising, and it is apparent how influenced the court was in Brown N.O. v Simmons *supra* by the judgments appearing in the official British case reports'.¹⁹⁷ Interestingly, the reported judgment refers to no English cases dealing specifically with this aspect.

Another Rhodesian case which has found its way into the South African literature is *Morewear Industries (Rhodesia) (Private) Limited v William Michie Irvine*¹⁹⁸ which was heard by the Patents Tribunal of Rhodesia and Nyasaland, and required the court to make a declaration in terms of section 46 of the Rhodesian Patents Act of 1957 as to which of the parties was entitled to the patent. The invention related to hitches had been made by the respondent, Irvine, during the period of his employment in the applicant company, Morewear. The issue was whether the design of the hitch fell within the ambit of what he had been employed to do. The court accepted that if this were the case, Morewear would own the invention. The court relied on the English case of *Patchett v Sterling Engineering* as source for a rule by which to decide two main issues in the case at hand:

'1. Did the respondent make the invention in the course of his duty, as an employee of applicant company? The onus is on the applicant to establish this. If applicant discharges that onus, then applicant must succeed unless respondent establishes; 2. That there was a special agreement between applicant and respondent entitling respondent to rights in respect of the patent, notwithstanding that the invention was made in the course of his duty as an employee'.¹⁹⁹

Much of the case is concerned with the first leg, namely to determine whether the respondent's invention fell within the course of his duties. The court found that on applying the principles it had culled from the English cases, 'it would be inconsistent with the duty implied from his contract of service that he should be allowed to hold the patent for that invention otherwise than as trustee for his employer'.²⁰⁰ The court clearly considered that the common law in Rhodesia implied such a rule where the

¹⁹⁷ Id 155.

¹⁹⁸ 1960 BP 202 (RPT). The case appears in Burrell (n54) 291.

¹⁹⁹ Id 204.

²⁰⁰ Id 207.

parties were in an employment relationship. However, issues similar to those in *Brown* arise with regard to *Morewear's* value as precedent for South Africa.

Morewear, along with *Patchett v Sterling*, was referenced in *Pressings and Plastics (Pty) Ltd and another v Sohnius ('Sohnius TPD')*²⁰¹ – arguably the closest our courts have come to expressly stating that there is an implied common-law rule. The matter is unusual because the employee, Sohnius, was effectively also the employer at the time of the invention. Sohnius was the sole employee of the two companies he ran. He sold his shares in the companies to the applicants, but had earlier applied for a patent on an invention he had made. The new owners of the two companies claimed that they had acquired the patent when the companies had been transferred because Sohnius had been an employee when the inventions were made. They claimed revocation of the patent under section 61 of the PA 1978 on the basis that it had been fraudulently obtained.

In *Pressings and Plastics (Pty) Ltd v Heinrich Sohnius*²⁰² ('*Sohnius CP*') the Commissioner of Patents found that the applicant's decision to proceed under the revocation provision rather than section 28 was 'misconceived'²⁰³ because section 28 was in fact

'clearly designed to apply to the case where a dispute arises between the employer and a person who is, or was at the material time his employee, as to the rights of the parties in respect of an invention made by the employee or in respect of a patent or patent application covering the invention'.²⁰⁴

Therefore, in response to the applicant's reliance on the two cases, the Commissioner found them irrelevant to section 61 as they had no 'bearing on the situation of an employee who applies for a patent in his own name with the express or tacit agreement of his employer'.²⁰⁵

²⁰¹ 1985 (4) SA 524 (T).

²⁰² 1984 BP 315 (CP).

²⁰³ Id 318.

²⁰⁴ Ibid.

²⁰⁵ Ibid.

On appeal, the court also found that section 28 was the appropriate provision, but held the appellants to their election to proceed under section 61(1) which meant that they had to show that the respondent had acted fraudulently. The appellants submitted that ‘arising out of the fact that the respondent was employed as the person who supervised and controlled the technical sides of the appellants, with the general duty to improve their products, what was imported into his employment was a term that an invention was the property of his employers’, and alternatively ‘by reason of the respondent’s managing directorship, it was inconsistent with his duty of good faith for him to benefit or profit against the appellants’.²⁰⁶

The basis for their argument in support of the first claim was that the ‘rule as stated in these cases [the English case of *Patchett v Sterling* and the Rhodesian *Morewear v Irvine* case], and in other decisions to the same effect, applies automatically by operation of law in a case such as the present in which the respondent’s [inventor’s] relationship to each of the appellants was that of an employee responsible for, *inter alia*, technical management and technical innovation’.²⁰⁷

The court also referred to *Morewear* where it was held that ‘it would make no difference to the application of the rule that the employee developed the invention at home and after hours’.²⁰⁸ The TPD noted further that the appellants ‘conceded that the operation of the rule could be excluded if the employer consented thereto, but contended that the *onus* in this case rested on the respondent to show such consent’.²⁰⁹

²⁰⁶ *Sohnius* n201 528.

²⁰⁷ *Ibid.* The court noted further that the appellants ‘relied on *Patchett v Sterling Engineering Co Ltd* [1955] 72 RPC 50; [1955] 1 All ER F 369 (HL). In that case Viscount SIMMONDS said...: “It is elementary that, where the employee in the course of his employment (ie, in his employer’s time and with his materials) makes an invention which it falls within his duty to make, ...he holds his interest in the invention and in any resulting patent, as trustee for the employer unless he can show that he has a beneficial interest which the law recognises.” And at 58 Lord REID said... “...it is, in my judgment, inherent in the legal relationship of master and servant that any product of the work which the servant is paid to do belongs to the master: I can find neither principle nor authority for holding that this rule ceases to apply if a product of that work happens to be a patentable thing”

²⁰⁸ *Ibid.*

²⁰⁹ *Ibid.*

The difficulty with this case is that the respondent was also effectively the sole shareholder of the appellant companies at the time. This meant that he had to prove that he had given himself consent to retain the invention. On the evidence it was found that he had in fact done so in a way that had not breached the good faith fiduciary relationship between him and the appellants.²¹⁰ The appellants were not able to show that the patent had been secured in fraud of their rights, as they were required to prove under section 61(1)(b) of the PA 1978.

It would appear that the court accepted the appellants' submission that the rule in the two cited cases should apply. However, given that, based on the argument put forward by the appellants, the court was only required to determine whether there had been fraudulent behaviour on the part of Sohnius under section 61, the question arises as to the value of this case as precedent for an implied rule. The court was not actually called upon to determine the rights of the parties, as it would have been had the appellants relied on section 28 of the PA 1978.²¹¹ In addition, no South African authority was introduced, and the court failed to explain its reliance on these cases as authority for the South African position. If anything, reliance on a tacit term to support employer ownership would be more appropriate, and the facts would likely have supported a finding in favour of the appellants, if one considers that the respondent supervised and controlled the technical side of the companies and had a general duty to improve their products.²¹²

In *Firm Construction Co Ltd v P G Kuse*²¹³ the issue was whether an assignment of a patent application by an employee to its employer was required before the employer could acquire rights in an invention made by the employee. The applicant was employed by WJM Rail (Pty) Ltd as a director. It was claimed that subject matter of the invention fell directly within the scope of the business of the company. According to the court in response to this information from the respondent, '[t]he conclusion which is drawn in this statement obviously refers to the fact that the inventor was, at the time of the invention, acting within the course of [sic] scope of

²¹⁰ Id 528-9.

²¹¹ See Burrell (n54) 151 for the appropriateness of this rule in employer/employee disputes.

²¹² Sohnius (n201) 528.

²¹³ 1997 BIP 25 (CP).

his duties with his employer, and that therefore the invention became the property of the employer'.²¹⁴

The applicant argued that an employee-inventor, 'even though he has no rights, also has the duty of assignment of his invention to the satisfaction of the registrar before a right of application to the patent accrues'.²¹⁵ Therefore, because there had been no assignment, the employer had not acquired rights in the application. The court rejected this argument by finding that 't]here is authority that no assignment is necessary as between the employer and the employee where he acted within the course and scope of his duties and if any proof should be needed, it can be provided either by submission of the contract of employment or by an affidavit, if it is an oral agreement, and I have no doubt that the Commissioner of Patents will act thereon in considering the application'.²¹⁶

It would seem that this case confirms that where the employer has derived title from the employee, it is not necessary to provide an assignment document as proof for the Registrar, but that lodging the contract of employment or other proof would be sufficient.²¹⁷ It is not clear whether this short statement on the issue by the court means that a contract of employment – without reference to employee-inventions tacitly or expressly – would suffice because it is indicative the type of relationship which attracts an implied common-law rule that vests ownership in the employer; or whether it is required that the employment contract or affidavit lodged must speak to the issue expressly or tacitly. In other words, in the latter case the interpretation of the provision means simply that the written assignment requirements as the basis for acquisition, will be fulfilled in this way. It could also simply be referring to the use of a tacit term in the contract of employment as the basis for the employer's acquisition. The employment contract and the allocation term it contains, whether tacit or

²¹⁴ Id 26.

²¹⁰ Id 29.

²¹⁶ Ibid.

²¹⁷ See also Merry & Vally (n162).

express, serve as proof that the employer acquired the rights through an assignment in the contract. Similarly, the affidavit would serve as proof of the same thing.²¹⁸

The uncertainty is compounded by the lack of authority cited in the case. There is also no reference to any sources for the formulation of an implied rule in the nature of ‘course and scope of employment’. Consequently, it is submitted, this case on its own cannot be viewed as (sufficient) authority for an implied common-law rule relating to patentable inventions, and at best would be an example of an acquisition on the basis of a tacit term.

In *Galison*, discussed in relation to inventorship above, it was proposed by Galison and accepted by the respondent, that the employer was entitled to apply for the patent by virtue of the invention having been made in the course and scope of its employees’ employment. Unfortunately, there was no further engagement with this proposed rule since it was argued on the basis that

‘[t]he defendant accepts that if Thorburn and Skelton devised the invention, they did so in the course and scope of their employment with the plaintiff and that the plaintiff will be entitled to be registered as patentee of the patent. If the plaintiff cannot prove that Thorburn and Skelton devised the invention of the patent then the plaintiff will not be entitled to any relief’.²¹⁹

It is not clear whether the plaintiff came to this conclusion based on a written term in the employment contract to that effect, or whether it was assumed by the parties that this was an implied term, or whether it was a tacit term. This agreement between the

²¹⁸ Id (n162) 29 where the authors claim that ‘[w]here an employer/employee relationship exists, albeit only by way of an oral agreement, an assignment of the patent to the employer is possible, provided that the employee acted in the course and scope of his or her duties as confirmed in the *Firm Construction* case. In such instances, if any proof is needed it can be provided by the submission of an affidavit (if the agreement was an oral agreement). Such assignment by operation of law is specifically provided for in s59 of the Patents Act...However, one would be wise to note the restrictions placed on the scope of such assignment by operation of law’. It is not clear whether they endorse an implied rule or whether they are simply restating the obvious – namely that it is possible to assign an invention but one has to bear s59(2) in mind.

²¹⁹ Id reg [2].

parties does not translate into binding precedent as to the existence and nature of an implied common-law rule to that effect.

*Makate v Vodacom*²²⁰ concerned an employee's claim to compensation for an invention which had resulted in substantial financial success for his employer. The technology developed was not a patentable invention but rather a business idea and no patent was filed. However, it potentially raised the question of ownership in the innovation, mainly as a defence by Vodacom to Makate's contractual claim for compensation. By the time the matter was heard by the High Court, it had been reduced to whether or not the person who had entered into the agreement with Makate, had had the authority to do so. However, in an earlier application for discovery, references to ownership of products made during employment had been raised. The court had noted that Vodacom's defence to Makate's claim was that 'any rights attaching to a product originated by him during the course and scope of his employment with Vodacom belonged to it',²²¹ but that '[i]n this regard the applicant claims that he was employed in Finance and not in the Research and Development Department'.²²² The only other reference was in the same case that

'the main issues relate firstly to whether the applicant is the originator of the product or the idea for the product, and, if so, whether there was an undertaking by Vodacom to remunerate him, either on a specific basis, based on an implied or tacit term of reasonable remuneration to a person in the position of the applicant employed in that type of industry [...] or whether he was not entitled to any additional remuneration because he was working for Vodacom at the time and , as a result, any innovation on his part (irrespective of the fact that he happened to work in accounts), immediately became the property of the company which employed him'.²²³

This is the sum total of the references to the issue. It may well have been a reference to a tacit term but it is certainly not precedent for an implied term relating to the issue of ownership of inventions.

²²⁰ *Makate v Vodacom (Pty) Ltd* 2014 (1) SA 191 (GSJ) 193 ('GSJ'); *Makate v Vodacom* case 08/20980 1 July 2014 ('HC').

²²¹ *Makate* (GSJ) 193.

²²² *Ibid.*

²²³ *Id* 201.

From the available case law, it is submitted that it is not possible to conclude that the common law supports an implied term entitling the employer to inventions made by the employee in all employment contracts. The case law specifically dealing with patentable inventions provides no convincing evidence of such rule – whether or not in the same formulation as the English common law – forming part of our body of judicial precedent. One could even argue to the contrary - the scope of the right has not been clearly articulated. While English law has certainly played a role in the development of both our labour and patent laws, principles in early cases like *Patchett v Sterling* are not automatically part of South African common law.²²⁴ At best, where courts have found in favour of employers, an argument in favour of a tacit term would be better supported by the various factual scenarios.

There does appear to be legal opinion in support of an implied common-law rule, usually formulated along the lines that ‘an invention made in the course and scope of employment belongs to the employer’. However, none of the proponents expresses the rule with any certainty or provides compelling authority.

Norman-Scoble, for example, bases his entire commentary on ownership of employee-inventions on foreign sources. Writing in 1956, he was of the view that the answer to the question of who is entitled to the benefit of an invention made by a ‘servant’, was that ‘[w]here a servant is employed to prosecute research work on behalf of his master then the master is entitled to the benefit of the result of the servant’s labours [...]’, but that ultimately ‘[m]uch however depends on the terms of the contract and the nature of the employment.’²²⁵

As regards patentable inventions, Norman-Scoble’s comments are somewhat difficult to understand. For example, he notes that

²²⁴ See Norman-Scoble C *Law of Master and Servant in South Africa* (1956) 157.

²²⁵ Ibid. ‘This is a right which may be enforced even after the termination of the servant’s services, as where he establishes another company for the purpose of incorporating his invention and exploiting it ... Moreover the mere fact that by terms of his contract, the servant agrees to communicate the results of his research to his employer, does not bar the servant, after employment has ceased, from making use of the general knowledge he has acquired by his efforts during his employment [...]’ Ibid.

'[t]he ordinary rule is that if an employee's invention is patented in the joint names of the employer and employee, the employee holds his interest as trustee for the employer. The rule can only be excluded by an express agreement to the contrary (*Sterling Engineering Co Ltd v Patchett* 1955 (1) All ER 369 (H of L))'.²²⁶

His reliance on English law for this observation makes little sense in the context of the PA 1952 which applied at the time. As Rattray notes, the 'rule' espoused by Norman-Scoble is likely a reference to the pre-BPA 1949 rule that the inventor had to be an applicant for the patent. Where, as between the employer and employee, the employer was entitled to the invention, it was a custom for employees and employers to file the application in their joint names and then have the employee assign his or her ownership to the employer. Because the BPA 1949 changed the rule to reflect that an applicant need not be the inventor, the practice would have had no relevance since the passing of that Act.²²⁷ Furthermore, in South Africa, assignees have always been allowed to apply for patents on inventions they have not invented.

According to Gerntholtz

'[i]f no contract exists between an employer and employee, the general view is that the rights in an invention made by an employee belong to the employer if:

1. The invention was made in the course of the employment of the employee, and
2. the invention is applicable in the line of business of the employer, and
3. it could be expected from the employee to make the invention'.²²⁸

Gerntholtz clearly advocates an implied common-law rule but does not substantiate this with any judicial precedent or common-law historical sources. The reference to 'general view' further points to the possible lack of authoritative sources.

²²⁶ Ibid.

²²⁷ See further Rattray (n127) 156.

²²⁸ Gerntholtz (n83) 73; Gerntholtz (n54).

In 1999, Burrell appears to support a rule favouring employer-ownership which can be traced to the common law, but sees it as now being implicit in the PA 1978 by virtue of section 59(2)(a).²²⁹ As explained previously, this is a shift from his earlier view which appeared to insist on a contract passing ownership from the employee to the employer. The reason for the shift is not clear. He relies on *Morewear* as his only authority. No further sources are added save for a reference to an 'interesting analysis' in an article by Moubray. The shift may simply be to clarify his earlier view, but it is clear that he recognises a common-law rule that an 'invention made by an employee within the course and scope of his employment would rightfully be the property of the employer'.²³⁰ Given the uncertain status of *Morewear* as precedent for South Africa, it may be concluded that even if the rule is not contentious, it was certainly not found in that form in South African precedent.

Abrahamson and Hooper expressly state that:

'South African common law provides that the rights to an invention made by an employee during the course and scope of his employment belong to the employer. This is so whether there is a formal employment contract or not. S59(2)(a) of the Patents Act specifically provides that a condition in a contract which requires an employee to assign to his employer an invention made otherwise than within the course and scope of his employment shall be null and void'²³¹

However, they continue that

'[t]here can be no doubt that an individual employed to carry out research in relation to business activities of his employer, has an obligation to assign the rights to that invention to the employer. So the rights of a research engineer, employed to carry out research on new and improved mining skips for a company making skips, have already passed to the employer by operation of law'.²³²

The authors provide no authority or reference for this. Furthermore, it is submitted that under the PA 1978, where the rights have passed by operation of law an

²²⁹ Burrell (n54) 290.

²³⁰ Ibid.

²³¹ Bramson & Hooper (n156) 25.

²³² Ibid.

assignment is unnecessary since operation by law is used in contradistinction to assignment. The Registrar would simply need proof of the acquisition.

Van der Merwe also notes that where ‘a contract of employment does not deal with inventions made during the course and scope of employment’, the common law applies. He posits that the common law is that ‘inventions made during the course and scope of employment are broadly accepted as belonging to the employer’.²³³ No references are provided to support the statement.

While there is sentiment supporting a common-law basis for employer-ownership in certain cases, the failure of the authors to provide compelling precedent or sustained argument, combined with the variations in the formulation of such a rule, are factors which call into question the legitimacy and scope of the claim.

3.4.4 Attribution of Employee-inventors

The PA 1978 makes no specific provision for the right of the employee to claim attribution as the inventor. The formal requirements governing the inclusion of the inventor’s details in the patent documentation irrespective of changes in ownership of the patent, apply equally in the employment context.

3.4.5 Preliminary Comment

The PA 1978 makes very limited explicit provision for the employee-invention paradigm. Section 59(2)(a) is the only reference to the employment relationship and it introduces familiar-sounding terms like ‘employee’ and ‘course and scope of employment’, without defining them. This concern extends beyond the interpretation of section 59(2)(a) to concern with the acquisition of title under a common-law implied or tacit term. Again, terms like ‘employee’, ‘employment’, and ‘course of employment’ emerge from the case law and opinions, but without a clear indication of their meaning in the particular context.

²³³ Van der Merwe (n54) 317.

In both the section 59(2)(a) situation and the common-law bases, the approach to interpreting the rule will determine the effect on either party. In other words, a broad interpretation of terms will affect the impact of the rule by, for example, favouring a particular party. The concern for this thesis is to understand what effect this has on the allocation of ownership. Since the concern arises as a consequence of the work relationship between the firm and the inventor, the nature and effect of such a context must inform the interpretation. In the next section, 'The Regulatory Context for the Employed Inventor in South Africa', I engage with the legal regulatory environment which exemplifies the employment context.

3.5 THE LABOUR REGULATORY CONTEXT FOR THE EMPLOYED INVENTOR IN SOUTH AFRICA

3.5.1 General

To understand the prevailing paradigm in which ownership of patentable inventions is allocated between employer-corporations and employee-inventors, it is necessary to establish the potential effect, if any, of the existence of an employment relationship on the regulatory context. To this end, attention is drawn to six propositions about the regulation of employment relationships in South Africa. These are not intended to be a detailed or analytical study of South African labour law but they serve to highlight pertinent features and policy considerations underlying the regulation of work relationships of the kind under consideration. References to the 'corporation' and 'inventor' are references to the employer and employee respectively.

3.5.2 Characteristics of the South African Labour Regulatory Framework

Proposition 1: There must be a legal nexus between the corporation and the worker

The first proposition is that the basis for any employment relationship is a legal *nexus* between the parties.²³⁴ The nature of that *nexus* is generally contractual.²³⁵ In the absence of such a relationship, rules regulating employment will not apply. Once a work arrangement between inventor and corporation is characterised in law as ‘employment’, then, notwithstanding how parties have structured their relationship and the terms they may have negotiated in respect of the ownership of inventions, the juridical nature of their relationship will attract an array of implied common-law and statutory rights and duties. It is the status of the parties, as employer and employee, which results in each being subject to these rights and duties.²³⁶ The issue is one which has seen courts shifting in their approach between focusing on the actual contract and the employment relationship as the basis.

However, employment relationships are used as a touchstone to serve different purposes and consequently a person who is an employee for the purposes of one set of legal consequences – for example, vicarious liability – would not necessarily be an employee where the employment relationship is used to allocate social security benefits.

Proposition 2: Common law ‘contracts of employment’ reflect the historical nurturing of a binary division between dependent and independent workers – a phenomenon captured in the classification of work arrangements as locatio conductio operum or locatio conductio operis

Although, much of the discretion to contract over employment has been lost to statutory regulation, the common law remains relevant where there are no statutory alternatives by which to determine the rights and duties regulating the employment relationship between the corporation and inventor.²³⁷ There is no single way of

²³⁴ See Wallis M ‘The LRA and the common law’ (2005) 9(2) *Law, Democracy and Development* 181.

²³⁵ See *Universal Church of the Kingdom of God v Myeni and others* (2015) 36 ILJ 2832 (LAC) par[51].

²³⁶ See Van Staden M & Smit N ‘The regulation of the employment relationship and the re-emergence of the contract of employment’ (2010) 4 *TSAR* 709; Theron ‘Who’s in and who’s out: Labour law and those excluded from its protection’ (2011) *LDD* 32.

²³⁷ See, for example, Wallis (n234) 190; Bosch C ‘The implied term of trust and confidence in South African labour law’ (2006) 27 *ILJ* 28, 29. Van Staden & Smit (n236) 712-718; Theron (n236) 31; See

encapsulating the essential nature of the contract of employment and '[f]actors identifying the contract of employment will depend to a large extent on how the contract is defined and *vice versa*'.²³⁸ Given the range of work arrangements which drive the modern economy, this is unsurprising and indeed is arguably a pointless endeavour because a single definition can never adequately represent the myriad manifestations of work relationships.

Nonetheless, historically, judicial preoccupation with the use of the employment relationship as a basis for holding corporates vicariously liable for the delicts of their workers, has led to the now conventional conceptualisation of the contract of employment as reflecting a binary divide between those who are 'employed' and those who are not. As the courts have struggled to determine whether a sufficient *nexus* exists between the corporate and its workers' delicts to impute liability, the issue has morphed into an enquiry based on whether the relationship is one of ongoing service - and hence also dependency - on the employer or one for the provision of services in terms of which the worker is independent of the firm. The former is styled as employment or *locatio conductio operarum*, in contrast to the latter which reflects an independent contractor arrangement or *locatio conductio operis*.²³⁹ In this way the existence of an employment relationship automatically makes the corporate employer potentially liable for the delicts of its employees.

The fruits of the judicial deliberation over who qualifies as an employee for purposes of vicarious liability, has provided the impetus for relying on 'employment' as a touchstone for rights and obligations in other contexts. The tests developed in the vicarious liability context have been used as a basis for imposing labour, social security, and even tax law rules, regardless of the differences in underlying policies. Attempts to define 'employment' has, and continues to be, the subject of

du Toit et al *Labour Relations Law: A Comprehensive Guide* 6ed (2015) 110, and for the general discussion 109-10; McKenzie (n166); Le Roux R & Jordaan B 'Part E Contract of Employment' in Thompson C & Benjamin C *South African Labour Law* vol 2 (2010/3) E1-2.

²³⁸ Le Roux & Jordaan (n237) E1-5.

²³⁹ See *Smit v Workmen's Compensation Commissioner* 1979 (1) SA 51 (A) 56-64 on the developments in Roman and Roman-Dutch law.

considerable scholarly engagement far beyond the scope of this thesis.²⁴⁰ However, a brief excursus is necessary.

One of the courts' earlier approaches was based on the control exerted by the employer over the worker. In terms of this 'control test', the main feature of an employment relationship is the control and supervision the employer exercises over how the employee performs his or her tasks.²⁴¹ This test developed in the context of vicarious liability, but was eventually used in relation to labour legislation.²⁴² However, the prevailing approach is to regard control as simply one *indiciu*m of a contract of service with its value dependent on the specific contract as a whole.²⁴³ Similarly, the 'organisation'²⁴⁴ test would be a factor even though it has been described as 'juristically speaking of such a vague and nebulous nature that more often than not no useful assistance can be derived from it in distinguishing between an employee (*locator operarum*) and an independent contractor (*conductor operis*) in our common law'.²⁴⁵

The most prevalent approach is the 'dominant impression' test which aims to establish the dominant impression from the facts at hand. This approach does not focus on any single aspect of the relationship, but considers the relationship as a whole. It gained popularity in *Smit v Workmen's Compensation Commissioner*²⁴⁶ in which Joubert JA promoted it as preferable to both the control and organisation tests for 'marginal cases'.²⁴⁷ This case was concerned, not with vicarious liability, but with

²⁴⁰ See for example Le Roux R 'Employment: A dodo, or simply living dangerously?' (2014) 35 *ILJ* 30-1. For more on the development of contract (history) see Van Staden & Smit (n236); 703-05; Le Roux R 'The worker: Towards labour law's new vocabulary' (2007) 124 *SALJ* 469.

470-472; Le Roux, R 'The regulation of work: Whither the contract of employment?' published PhD thesis 2008 on the concerns attendant on trying to define the contract of employment.

²⁴¹ See *Colonial Mutual Life Assurance Society v McDonald* 1931 AD 412. See further du Toit et al (n237) 91; Le Roux & Jordaan (n237) E1-6.

²⁴² Le Roux & Jordaan (n237) E1-6.

²⁴³ *Smit* (n239) 62.

²⁴⁴ *R v AMCS* 1959 (4) SA 207 (A). See du Toit et al (n237) 91; Le Roux & Jordaan (n237) E1-7.

²⁴⁵ *Smit* (n239) 63.

²⁴⁶ *Smit* (n239).

²⁴⁷ *Id* 62.

whether the appellant was a ‘workman’ as contemplated in the Workmen’s Compensation Act 30 of 1941 to enable him to claim compensation for injuries sustained in a motor vehicle accident while working as an agent for an insurance company.²⁴⁸ It has been criticised for its ‘question-begging nature’ but remains popular.²⁴⁹ The dominant impression test, or variations of it – for example the ‘reality test’²⁵⁰ – has since been used for various purposes, including statutory labour law, even though it developed in the context of ascribing benefits under workmen’s compensation. So, for example, it has been applied to interpret the statutory definition of employee under the LRA in *SITA (Pty) Ltd v CCMA*.²⁵¹ In this case the Labour Appeal Court, in applying the dominant impression test, identified the following key factors in creating the dominant impression: the employer’s right to supervise and control; the employee’s position as an integral part of the organisation; and the economic dependence of the employee on the employer.²⁵²

Even with this fluidity, characteristic features of the common-law contract of employment can be discerned. Grogan sums it up as ‘an agreement between two parties in terms of which one of the parties (the employee) undertakes to place his or her personal services at the disposal of the other party (the employer) for an indefinite or determined period in return for a fixed or ascertainable remuneration, and which entitles the employer to define the employee’s duties and to control the manner in which the employee discharges them’.²⁵³

²⁴⁸ Id 56. The Workmen’s Compensation Act 30 of 1941 s3(1) provided that a ‘workman’ was ‘any person who has entered into or works under a contract of service or of apprenticeship or learnership, with an employer, whether the contract is express or implied, is oral or in writing, and whether remuneration is calculated by time or by work done, or is in cash or in kind ...’.

²⁴⁹ Du Toit et al (n237) 9; See Le Roux & Jordaan (n237) E1-8. See the factors in *SABC v McKenzie* [1999] 1 BLLR 1 (LAC).

²⁵⁰ See du Toit et al (n237) 92.

²⁵¹ [2008] 7 BLLR 611 (LAC); *Denel (Pty) Ltd v Gerber* (2005) 26 ILJ 1256 (LAC).

²⁵² *SITA* (n245) paras [12]-[13]. See further Benjamin P ‘An accident of history: Who is (and who should be) an employee under South African labour law?’ (2004) 25 *Industrial Law Journal* 787.

²⁵³ Grogan J *Employment Rights* (2014) (‘Grogan 2014a’) 44.

The most basic duty of the employee is to tender his or her services to the employer.²⁵⁴ This is the *quid pro quo* for remuneration by the employer. Duties of the employee include the obligation to perform agreed tasks with reasonable efficiency, to obey the employer's instructions in relation to the performance of the work, to refrain from misconduct, to 'further the employer's business interests',²⁵⁵ and to act in good faith. The latter forms the basis for a range of implied terms such as the undertaking not to steal the employer's materials. Bosch notes that many of the employee's common-law duties 'derive from the employee's subordinate position in the employment relationship and the fact that the employee is hired to further the employer's business interests'.²⁵⁶ The employer's duties generally are to receive the employee into service,²⁵⁷ to remunerate the employee,²⁵⁸ to provide reasonably safe working conditions,²⁵⁹ and to treat the employee fairly.²⁶⁰ The ownership of patentable invention, and indeed inventions broadly defined, is not recognised with similar certainty.

Proposition 3: South African labour law has developed in around the conceptualisation of labour as contractual

The formulation of work arrangements through contract means that parties can contract on almost any terms provided that they do not conflict with legislation and are not contrary to public policy. However, reliance on contract as the basis for work arrangements has historically been associated with the abuse of the power differential inherent between those who can afford to employ the services of workers, and those who seek to be employed. As a consequence, labour law has developed as a countervailing force to the power differential between the employer and employee.²⁶¹ Although this is not a development unique to South Africa, it must be

²⁵⁴ See for example Grogan J *Workplace law* 11ed (2014) ('Grogan 2014b') 52-3.

²⁵⁵ Grogan 2014b (n254) 55.

²⁵⁶ Bosch (n237) 31.

²⁵⁷ Grogan 2014b (n254) 58-9.

²⁵⁸ Id 60-1.

²⁵⁹ Id 59-60.

²⁶⁰ Id 62. For more on the employer's duties see Bosch (n237).

²⁶¹ See Van Staden & Smit (n236) 705; Theron 2011 (n236).

seen against the backdrop of not only the historical shift from the master and servant status to contract as the basis for the relationship, but also the racial segregation that has characterised South Africa's workplace history.²⁶²

In order to mitigate the harsh effects of the imbalance in bargaining power on employees' conditions of employment, two broad developments emerge.²⁶³ The first is the inclusion in the employment relationship of measures introducing substantive protection for employees. The second is the development of procedural methods to bolster employees' bargaining power.

In respect of the first, while the common law implies certain protective measures in the contract of service – for example, the duty of the employer to provide safe working conditions and to treat the employee fairly – the parties' unequal bargaining power means that these offer no recourse against the exclusion of these protective implied terms or the imposition of iniquitous ones. As a consequence, intervention in the form of statutory minimum conditions of employment, serve to ensure that employees retain a minimum level of rights. This is evident, for example, in the rights against unfair dismissal²⁶⁴ and unfair labour practices²⁶⁵ in the LRA, as well as the BCEA which implies minimum basic conditions including the regulation of working time, leave, and notice periods for termination of a contract.²⁶⁶ Generally, while

²⁶² See further du Toit et al (n237) Ch1 for the historical development of labour relations in South Africa.

²⁶³ See further Langille B 'Labour law's back pages' in Davidoff G & Langille B (eds) *Boundaries and Frontiers of Labor Law* (2006) 12ff for more on this approach to the conceptualisation of labour law generally.

²⁶⁴ LRA ss185(a) and 186(1). For details see du Toit et al (n237) Ch VII.

²⁶⁵ LRA ss 185(b) and 186(2). The LRA 1995 provides for a closed list of conduct short of dismissal by the employer which would constitute an unfair labour practice during the course of the employment. These include, for example, unfair conduct in relation to promotions and demotions, unfair suspensions of employees, and a failure to reinstate an employee in terms of an agreement. See further du Toit et al (n237) Ch VII 545-78; Govindjee A & van der Walt AJ 'Labour law and the Constitution' in van der Walt AJ, Le Roux R and Govindjee A (eds) *A Labour Law in Context* (2012) 74-84.

²⁶⁶ See du Toit et al (n237) at Ch X for details of the BCEA.

employers are permitted to institute work conditions better than those stipulated in the legislation, they may not fall below the minimum threshold.²⁶⁷

Other legislative interventions affecting the employment relationship include the Employment Equity Act 55 of 1998 ('EEA') and the Skills Development Act 97 of 1998 ('SKA'). However, as mentioned in Proposition 2, the statutory provisions do not replace the common-law contract of employment unless they specifically so provide. Consequently, substantive protection under the common law would subsist unless superseded by a statutory rule.²⁶⁸

The second line of evolution in labour law in South Africa is the recognition of the power of collective action as a way of increasing employees' bargaining power. Although the recognition of trade unions and employers' organisations, as well as of collective bargaining, have been a feature of South African labour law development at least since the Industrial Conciliation Act 11 of 1924, implementation was racially exclusive²⁶⁹ and was just one of a range of policies to segregate the workforce along racial lines.²⁷⁰ Currently, the LRA is the pivotal legislation for the recognition of collective action as a countervailing force, and provides the framework for collective bargaining by trade unions and employers' organisations over 'wages, terms and conditions of employment and other matters of mutual interest'.²⁷¹ The Act recognises the right to freedom of association in the form of employer and employee organisations, although it limits membership of bargaining councils and statutory councils to registered trade unions and employers' organisations.

The collective bargaining model is based on voluntarism, and du Toit et al identify four defining features: it brings parity by equipping employees and unions rights to organise and strike, amongst others,²⁷² it encourages conciliation and the refusal to

²⁶⁷ See BCEA ss4(a)-(c) and 49.

²⁶⁸ See *McKenzie* (n166).

²⁶⁹ See also Industrial Conciliation Act 28 of 1956.

²⁷⁰ For further discussion of the developments that led to the current dispensation, see du Toit et al (n237) 6-14.

²⁷¹ LRA s1(c). This is just one of the stated purposes of the Act in s1.

²⁷² Du Toit et al (n237) 281-282.

bargain will precipitate an unprotected strike;²⁷³ it favours sectoral over plant-level bargaining; and in certain cases, requires *de facto* bargaining.²⁷⁴

The main point of Proposition 3 is that in South Africa, contract as the sole determinant of rights and duties between employers and employees, has been rejected in favour of a system that attempts to counteract some of the consequences of the inequality in bargaining power. While none of these relates specifically to ownership of employee-inventions, they form part of the policy space in which the issue arises.

Proposition 4 A common-law contract of employment is not always necessary to establish an employment relationship for the purposes of labour law

Statutory labour law as discussed in Proposition 3 will only apply to the inventor and corporation if their relationship is of the type which attracts the provisions of the particular statute. It has been noted that ‘establishing whether a particular individual is an employee or not depends on why the question is asked in the first place’.²⁷⁵ Therefore, the LRA and the BCEA, for example, apply only to ‘employees’, within the meaning prescribed by statute. Whether or not an inventor is protected by the legislation, will depend on whether he or she falls within the statutory definitions.²⁷⁶ This mechanism for extending the operation of the legislation to a particular sector of the workforce is a response to the inadequacies of the common-law conception of the contract of employment for these purposes. In other words, relying on contract to determine whether a worker is an employee, places the worker at risk in light of the possibility of structuring the relationship in a way that does not appear to meet the common-law requirements for a *locatio conductio operarum*.

The LRA and the BCEA provide essentially the same definition of ‘employee’, namely ‘any person, excluding an independent contractor, who works for another

²⁷³ LRA s64.

²⁷⁴ Du Toit et al (n237) 282.

²⁷⁵ Le Roux & Jordaan (n237) E1-4.

²⁷⁶ See further on statutory definitions of ‘employee’ Van Staden & Smit (n236) 706-08; Le Roux 2007 (n240) 470-73; Theron 2011 (n236) 25.

person of for the State and who receives, or is entitled to receive, any remuneration; and any other person who in any manner assists in carrying on or conducting the business of the employer'.²⁷⁷ There is no distinction between employees based on their position in the enterprise. Consequently, directors and managerial staff are regarded as employees and there are no sectoral distinctions.

At first glance the definitions appear quite broad and even workers who would not be regarded as 'employees' under the common law, may be protected under the legislation – provided they are not 'independent contractors'.²⁷⁸ Even so, concerns over ensuring that workers are not denied protection led to the introduction of statutory presumptions to assist in the interpretation of 'employee' in both the LRA and the BCEA.²⁷⁹ Both statutes provide for a presumption in favour of a person being an employee unless he or she earns in excess of an amount determined by the Minister of Labour.²⁸⁰ Consequently, section 200A of the LRA provides that

'for the purposes of [the LRA], any employment law, and section 98A of the Insolvency Act, 1936 ... a person who works for, or renders services to, any other person is presumed, regardless of the form of the contract, to be an employee, if any one or more of the following factors is present:

- a) The manner in which the person works is subject to the control or direction of another person;
- (b) the person's hours of work are subject to the control or direction of another person;

²⁷⁷ LRA s213; BCEA s1 definition of 'employee'. However, there are various qualifications, for example, employees of certain organisations, such as the National Defence Force ('SANDF') and the National Intelligence Agency are excluded from the LRA; and in respect of the BCEA, the Minister of Labour may, on the advice of the Employment Conditions Commission, deem any category of persons employees for the purposes of the Act.

²⁷⁸ See du Toit et al (n237) 73 on the second part of the definition.

²⁷⁹ On the presumptions See du Toit et al (n237) 513; Theron 2011 (n236) 34ff.

²⁸⁰ The determination is in terms of s6(3) Basic Conditions of Employment Act. See LRA s200A(2). du Toit et al (n231) 93-4 note that while '[c]onceptually there can be no reason for distinguishing nature of the relationship between parties solely on the basis of income' the presumption 'conforms that the purpose of the amendment is to protect those workers who are economically most vulnerable by reversing the burden of proof for establishing the existence of an employment relationship only in the case of lower-paid workers'.

- (c) in the case of a person who works for an organisation, the person is part of that organization;
- (d) the person has worked for that other person for an average of at least 40 hours per month over the last three months;
- (e) the person is economically dependent on the other person for whom that person works, or renders services;
- (f) the person is provided with tools of trade or work equipment by the other person; or
- (g) the person only works for or renders services to one person'.²⁸¹

Continued concerns, however, led the Department of Labour to issue the 'Code of Good Practice: Who is an Employee'²⁸² to be considered when determining whether someone is an employee for the purposes of the LRA, the BCEA, the EEA and the SKA.²⁸³ One of the purposes of the Code is to ensure that employees are not deprived of the protection of the legislation by entering into disadvantageous contractual arrangements with employers.²⁸⁴ The Code may also be used for the enquiry in the context of other legislation such as the Occupational Health and Safety Act ('OHSA'),²⁸⁵ the Compensation for Occupational Injuries and Diseases Act ('COIDA')²⁸⁶ and the Unemployment Insurance Act.²⁸⁷ The relatively lengthy Code arguably does little more than repeat the interpretations of the courts.²⁸⁸

²⁸¹ LRA s200A(1). For more on the effect of the presumption see du Toit et al (n237) 79. See *Universal Church of the Kingdom of God v Myeni and others* (2015) 36 ILJ 2832 (LAC) paras [36]-[52] for the application of the presumption. The presumption does not operate where there is no contrail undertaking between the parties.

²⁸² Dept of Labour 'Code of Good Practice: Who is an Employee' Gen Notice 1774 GG 29445 of 1 December 2006 ('Code of Good Practice').

²⁸³ Id reg 3.

²⁸⁴ Id reg 2(d).

²⁸⁵ 85 of 1993.

²⁸⁶ 130 of 1993.

²⁸⁷ 63 of 2001. See Code of Good Practice reg 4, especially the caveat therein that 'it must be borne in mind that the definitions of an employee in those statutes differ from that contained in the LRA. However, there are sufficient similarities for the Code to be of considerable assistance in determining who is covered by these statutes'.

²⁸⁸ See further Theron 2011 (n236) 36. Also, *Universal Church of the Kingdom of God v Myeni* (n275) para [31].

In determining whether a worker falls within the definition, it is the substance of the relationship between parties as opposed to its form. Therefore, even if parties structure their relationship in a way that appears to exclude the operation of statutory provisions, the courts will look past the form of the contract to determine the status of the parties.²⁸⁹ The point to be made in Proposition 4 is that the status as an employee is a necessary requirement for access to statutory protection. Labour law has sought to define ‘employee’ in a way that ensures that those whom it seeks to protect, indeed fall within the purview of the legislation. It is the substance of the relationship rather than its form which will determine rights.

However, while it may be said that the legislative developments are evidence of an attempt to counter attempts by employers to avoid the statutory protections by framing the work relationship as something other than employment, it is not always the case that a relationship as opposed to an actual contract setting out the intention to employ, will be appropriate. While *SITA* may have suggested that the relationship is more relevant than the existence of an actual contract this approach is by no means generally accepted.²⁹⁰ This is clear, for example, from the emphasis that the LAC in *Universal Church* placed on the contract as the basis for employment.²⁹¹

Proposition 5: A-typical employment relationships pose challenges to the protective purpose of labour laws

The traditional binary divide between the *locatio conductio operarum* and the *locatio conductio operis* has been called into question for its failure to recognise the myriad work arrangements which in fact operate outside of this singular conceptualisation of employment. The LRA responds to this by moving away from the common-law contract of employment as the basis for protection to one of status. This, coupled with the broad definition of ‘employee’ would seem to speak to the concerns of those in non-standard employment. Only genuine independent contractors should be precluded from claiming the protection of labour laws as they are expressly excluded

²⁸⁹ *Denel* (n251); *SITA* (n251).

²⁹⁰ *SITA* (n251).

²⁹¹ *Universal* (n235)

from the definition of 'employee'. However, although statutory definitions of 'employee' may be aimed at mitigating the possible exclusion of workers from benefits, the interpretation of 'employee' gravitates towards an alignment with the *locatio conductio operarum*, likely as a consequence of the effort to distinguish them from independent contractors. The result is that it remains possible to contract in a way that avoids the statutory obligations by structuring the work arrangement in a way that does not conform to what is essentially a single employment model. However, courts have responded to this by considering the substance of the relationship, not its form.²⁹²

One such example is the use of labour brokers or temporary employment services to supply labour. The use of 'triangular' relationships, it has been noted, 'creates a glaring exception to all the tests which have been relied upon by the courts to identify an employment relationship, as the employee of the labour broker is effectively controlled by and subsumed within the organisation of the client'.²⁹³ The LRA provides that 'a person whose services have been procured for or provided to a client by a temporary employment service is the employee of that temporary employment service, and the temporary employment service is that person's employer'.²⁹⁴ The recent amendments to the LRA²⁹⁵ seek to alleviate the vulnerability of workers employed by temporary employment services, and include measures for deeming workers to be the employees of the client in certain cases.²⁹⁶

²⁹² See Proposition 4.

²⁹³ Du Toit et al (n237) 99.

²⁹⁴ LRA s198(2).

²⁹⁵ Labour Relations Amendment Act 6 of 2014, commenced 1 January 2015.

²⁹⁶ The interpretation of this provision was first considered in *Assign Services (Pty) Ltd and Krost Shelving & Racking & another* (2015) 36 ILJ 2408 (CCMA) in which it was found that the client of the temporary employment service became the sole employer of the employees. However, this was set aside by the Labour Court in *Assign Services (Pty) Ltd v Commission for Conciliation, Mediation & Arbitration & others* (2015) 36 ILJ 2853 (LC) on the basis of material errors of law. In making the order, Brassey AJ was of the view that 'the expression is a fertile source of confusion and, even were I willing to make an order on an issue framed in such abstract terms, I should want it to be far more precise. In my view, therefore, it is highly undesirable to make an order substituting the commissioner's award with a substantive order of my own' (para [26]). Consequently, it is unclear

In this way, attempts to obfuscate the true nature of the contract and reduce labour costs by, for example, avoiding statutory payments for social insurance for workers, are counteracted.²⁹⁷

Proposition 6: *The employment relationship has, over the years, been used as the touchstone for legal consequences which do not fall squarely within the countervailing purpose of labour law*

The use of an employment relationship as a touchstone for rights and duties appears, for example, in the context of vicarious liability and social security laws.²⁹⁸ In the case of the latter, the provision of insurance against workers' temporary or permanent loss of ability to earn an income is generally tied to their employment. The COIDA²⁹⁹ and the Unemployment Insurance Act,³⁰⁰ each provide their own definition of 'employee' independently of the labour legislation.³⁰¹

whether the approach of the CCMA stands. For more on a-typical employment see van Staden & Smit (n236) 707.

²⁹⁷ See, for example, Le Roux 2014 (n240) 35-40.

²⁹⁸ It also appears in other areas of law like occupational health and safety (see OHSA) 'employee' is defined in s1 as 'subject to the provisions of subsection (2), any person who is employed by or works for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person', and see s1(2.); and taxation.

²⁹⁹ Compensation for Occupational Injuries and Diseases Act 130 of 1993. See definition of 'employee' s1 as 'a person who has 'entered into or works under a contract of service or of apprenticeship or learnership, with an employer, whether the contract is express or implied, oral or in writing, and whether the remuneration is calculated by time or by work done, or is in cash or in kind'; see also s22(1) and s22(4) for the scope and application of the Act. See *MEC for the Department of Health v D[...]/N[...]* (924/2013) [2014] ZASCA 167 (8 October 2014) on whether the plaintiff's rape while on duty arose out of and in the course of employment to enable the plaintiff to bring a claim under COIDA.

³⁰⁰ Act 30 of 1966. See definition of 'employee' as 'any natural person who receives remuneration or to whom remuneration accrues in respect of services rendered or to be rendered by that person, but excludes any independent contractor' s1.

³⁰¹ However, the Code of Good Practice (n282) reg 4 provides that the Code 'should also be taken into account in determining whether persons are employees' for the purposes of these statutes but that 'it must be borne in mind that the definitions of an employee differ from that contained in the LRA. However, there are sufficient similarities for the Code to be of considerable assistance in determining who is covered by these statutes'.

Vicarious liability is a useful example of how the status of ‘employment’ acts as a marker to give effect to a non-labour purpose. Interestingly, the development of the test in this context to determine the existence of a relationship, which would form the basis for holding employers strictly liable for the delicts of their workers, was later used in labour law.³⁰²

The law of delict is broadly concerned with reallocating loss for harm suffered.³⁰³ It provides a remedy, generally in the form of compensation, for the harm. As Neethling notes, ‘the fundamental premise in law is that damage (harm) rests where it falls, that is, each person must bear the damage he suffers’.³⁰⁴ Vicarious liability is a form of strict delictual liability because it holds the employer vicariously liable for the delicts of its employees – even where the employer is not at fault – provided that the delict was committed in the course and scope of the employee’s employment. The nature of the employment plays no role in the courts’ decision, and employers may be held liable for the delicts of professional and highly-skilled employees.³⁰⁵

There are various theories to justify holding the employer liable. These include that the employer has control over its employees, that it has created the risk,³⁰⁶ that ‘the employer can be considered to be the actor where he or she acts through an employee’,³⁰⁷ that the employer must bear the burden of the loss in the same way that it derives benefit from the employee’s actions,³⁰⁸ and that from a social welfare perspective, the employer is in a better financial position to carry the loss.³⁰⁹

³⁰² See further discussion of *Colonial Mutual Life Assurance Society v McDonald* 1931 AD 412 in Le Roux PhD Thesis (n240); Le Roux & Jordaan (n237) E1-6. For an overview of the various relationships which may give rise to a finding of vicarious liability, not necessarily in the employment context, see Wagener S ‘The relationship(s) giving rise to vicarious liability in South African law’ (2014) 131 SALJ 178.

³⁰³ Loubser M (ed) *The Law of Delict in South Africa* (2012) 6, 11.

³⁰⁴ Neethling J & Potgieter JM *The Law of Delict* (trans and ed Knobel J) (2015).

³⁰⁵ *Esterhuizen v Administrator Tvl* 1957 (3) SA 710 (T).

³⁰⁶ See *K v Minister of Safety and Security* 2005 (6) SA 419 (CC).

³⁰⁷ Loubser (n303) 384.

³⁰⁸ Ibid.

³⁰⁹ Neethling (n304) 338.

The employer's liability is dependent on the existence of an employment relationship at the time of the delict.³¹⁰ To determine this the courts look to the common law to show whether or not the corporation is an employer, and thus vicariously liable.³¹¹ However, the way that they interpret the common-law test relates back to the purpose for the enquiry, for example in *Midway Two Engineering & Construction Services v Transnet Bpk*,³¹² where the court found that a labour broker's client was the employer for purposes of vicarious liability, as it was more closely related to the risk creation. The limiting factor is that the delict must have been committed in the course (and scope) of employment,³¹³ The courts have not distinguished between 'course' and 'scope' as a necessary element in the enquiry, and the meaning appears to be dependent on what needs to be achieved. Ultimately, therefore, the finding will depend on the court's rationale in imputing liability.³¹⁴

Similarly, the consideration of who is an employee for the purposes of statutory workmen's compensation in *Smit v Workmen's Compensation Commissioner* 1979(1) SA 51 (A),³¹⁵ has been appropriated as a test for the existence of an employment relationship in other contexts, for example, labour law and even copyright.³¹⁶

³¹⁰ Id 339.

³¹¹ See also *Goldberg v Durban City Council* 1970 (3) SA 325 (N) that parties cannot avoid employment simply by labelling the relationship 'independent contractor'. On the case, see Neethling (n304) 340.

³¹² *Midway Two Engineering & Construction Services v Transnet Bpk* 1998 (3) SA 17 (SCA) 23.

³¹³ See *Crown Chickens (Pty) v Rocklands Poultry v Rieck* 2007 (2) SA 118 (SCA). See also Calitz K 'The close connection test for vicarious liability' (2007) *Stell LR* 451 who notes that this requirement is the 'ensures that there is a measure of fairness towards the employer who is held strictly liable' 451.

³¹⁴ For example, intentional wrongdoing by the employee even though it was done while carrying out authorised work, eg, *Ess Kay Electronics (Pty) Ltd v First National Bank* 2001 (1) SA 1214 (SCA); *ABSA Bank v Bond Equipment (Pretoria) Pty Ltd* 2001 (1) SA 372 (SCA) involving a frolic of their own; but see State liability in *Minister of Safety and Security v Luiters* 2006 (4) SA 160 (SC), 2007 (2) SA 106 (CC); *K v Minister of Safety and Security* 2005 (6) SA 419 (CC); *Minister of Finance v Gore NO* 2007 (1) SA 111 (SCA). See further Loubser (n303) -91; Calitz K 'Vicarious liability of employers: reconsidering risk as the basis for liability' (2005) *TSAR* 215.

³¹⁵ *Smit* (n239).

³¹⁶ See comments in Benjamin (n252) 788. See Chapter 4.

The thrust of Proposition 6 is that it is possible to link legal rights and obligations to the existence of an employment relationship, but this entails, or ought to entail, reconceptualising employment for the particular purpose. The reasons for wanting to identify a worker as having a particular status – which may be labelled ‘employment’ – must inform the criteria for that status. Tests developed in the context of vicarious liability, for example, must be understood in the context of the policy underlying the desire to impose strict liability on someone other than the worker. The understanding of employment in that context must therefore align with the purpose of such liability. Similarly, using employment as a touchstone for other purposes, for example tax liability, social security, or allocation of ownership of intellectual property, must be informed by the appropriate policy.³¹⁷ This in turn will shape how employment is defined in that context.

3.6 THE SOUTH AFRICAN APPROACH AS AN INCENTIVE MECHANISM

When one considers the South African approach through the framework for an optimal allocation which was established in 2.5, the conclusion is that the current regulatory framework does not clearly direct the incentive potential of the patent and the right of attribution to employers and employees in a way that expressly furthers the purpose of patents. This is primarily because the system does not stray far from the international patent paradigm introduced in Chapter 2.

Simplistically, the system works to reward the individual inventor and as a result, the employer’s financial resource contribution is not recognised either through the allocation of default ownership or through attribution. If one reviews this against the principles in the model framework, then it clearly acts as a disincentive for the employer to invest because irrespective of whether the employer had directed resources specifically to the development of the invention and the employee’s

³¹⁷ See for example the discussion in *MEC for the Department of Health* in respect of the policy behind COIDA and how this affects the determination of whether an accident arises out of an individual’s employment. Because the aim of the legislation is to assist workers, it has consistently been interpreted generously by the courts (*MEC for the Department of Health* (n299) par [7]).

motivation was to meet his or her obligations under the contract of service (in other words, motivated by the employer's needs), the employee-inventor is recognised as the first owner.

However, it has been shown that the PA 1978 does provide for employers to acquire the rights in the invention from the inventor. Whether or not this serves to counter what appears to be an employee-friendly approach depends on the degree to which the system enables employers to assume ownership as a matter of course in those cases where the resource contribution needs to be recognised. Firms are not recognised for their contribution of resources and their only claim to ownership of employee-inventions which they have funded and initiated must be derived from their relationship with the employee.

The employer can acquire the right to apply through either assignment or operation of the law. In the first case, contract will form the basis for the assignment. However, the freedom to acquire title in this way is limited by section 59(2) which puts in place measures to limit the scope of the inventions which can be transferred to the employer. It is limited to contracts of 'employment' and further, to assignments made outside the 'course and scope' of the employment contract. The tenor of the provision is clearly to keep certain inventions out of the employer's reach in certain circumstances where a particular type of relationship – namely employment - exists. Thus s59(2) recognises the power differential between the employee and employer at the inception of the employment relationship, and is a means of ensuring that employees are not divested of future inventions as a matter of course.

However, the legislation does not provide guidance as to how the provision should operate. It is clear that it anticipates an employment relationship but ignores that fact that labour law in South Africa has developed in a way that points to an increasing difficulty in defining 'employment'. This is further supported by the use of 'course and scope' which appears to further limit the types of inventions which can be the subject of preinvention assignments. However, its actual effect will be determined by the approach of the courts to interpreting these provisions. If one considers this provision against the labour regulatory context for employment relationships, it seems to reflect the policy considerations which underlie the development of labour law, namely to protect employees who are generally in a weaker bargaining position.

However, a failure to appreciate this, could result in an interpretation which limits the application, for example, by restricting employment to a common law contract (as opposed to the broader statutory approach in the LRA and BCEA), or by using vicarious liability as a basis.

However, the failure of the system to provide a statutory first-ownership rule in favour of employers and the limitations of section 59(2) must not be seen as necessarily disadvantageous to employers. It can also be viewed as identifying those inventions which an employer *can* lay claim to through a preinvention assignment – namely inventions not made in the course and scope of employment. If the employer wishes to acquire such an invention, it must engage with the inventor outside of the employment relationship. Here the employee will be in a less dependent position than if the negotiation formed part of the terms of ongoing employment.

Where the employee is obliged to assign inventions he or she is not entitled, as a matter of course, to compensation from the employer. Where the assignment is part of the employment contract, the employee is entitled to his or her salary in the normal course. There is no statutory requirement that the employer share in the benefits derived from the patented invention, regardless of how successful the commercialisation may be. Therefore, where the employee is divested of ownership, the salary from the employer must serve as the incentive for him or her to reinvest his or her intellectual effort into making another invention.

In the absence of an assignment from the employee, rights may devolve on the employer by operation of law. Various concerns arise. Where the inventor is divested of first ownership through operation of law, whether by an implied statutory provision or by a common-law rule, this is an external source of regulation. As an external source, the reason for the rule and its effect on allocation, may or may not align with the purpose of the patent system in South Africa.

For example, as regards the argument that there is an implied common-law rule that employers own employees' inventions, the reason for implying the rule will likely not be directly aligned with the innovation purpose of patents and would depend on the relationship between the inventor and the investor conforming to the common-law

requirements. This raises concern about the nature of the relationship that attracts these common-law consequences. This requires a consideration of the definition of employment which would attract the concerns associated with relying on existing definitions from other areas of law; at present there is a quagmire of definitions for 'employee', none of which we can assume fits the patent purpose. It is submitted that the current position is, at best, uncertain, and that even if it could be said that there is a common-law rule which allocates ownership in patentable inventions, its scope and application have not been developed by the courts in a way that speaks to the purpose of granting a patent.

There is also no provision for a clear right of attribution although the registration requirements make it implicit that the employee-inventor will be identified.

In closing, it is submitted that the current regulatory framework does not clearly direct the incentive potential of the patent and the right of attribution to employers and employees in a way that expressly furthers the purpose of patents, mainly as a result of the lack of clarity surrounding the scope and functioning of acquisition through assignment or operation of law, and the failure to ensure that in cases where the invention is not vested in the employee-inventor, there is a way to ensure that the actual reward is adequate to ensure a repeat performance.

CHAPTER 4

THE SOUTH AFRICAN LEGISLATIVE CONTEXT: COMPLEMENTARY AND ALTERNATIVE RULES FOR THE OWNERSHIP OF INTELLECTUAL PROPERTY DERIVED DURING INNOVATION

4.1 INTRODUCTION

Thus far the analysis of the South African position has been narrowly focused on the allocation of ownership in inventions under the PA 1978. However, a more complete understanding of the legislative context in which the ownership in employee-inventions operates requires an understanding of the alternative and complementary intellectual property rules which regulate intellectual property produced during the innovation process.

Since intellectual property rights in general, are regarded as tools for innovation in South Africa,³¹⁸ the survey aligns with the framework in Chapter 2 that sees both economic and attribution rights conceptualised as part of the incentive function. This is not a detailed analysis of each statute or area of intellectual property, but is limited to showing how the legislature has elected to allocate the economic and attribution rights in intellectual products which are associated to patentable inventions in the innovation process. The common concern is the effect of the employment relationship on this allocation in each case.

To this end, this chapter examines the ownership rules when:

- * patentable inventions are made under the IPPFRD Act;³¹⁹

³¹⁸ See Chapter 3.

³¹⁹ Act 51 of 2008.

- * preparatory work such as compilations of data and technical drawings generated in the course of the inventive process attract copyright under the Copyright Act;³²⁰
- * designs for industrial products which may or may not incorporate patented inventions, are registered under the Designs Act³²¹ ('DA 1993');³²² and
- * plant varieties are developed and, based on their exclusion from patentability, are protected under the Plant Breeders' Rights Act³²³ ('PBRA 1976').

4.2 PUBLICLY-FINANCED PATENTABLE INVENTIONS

4.2.1 The Relationship between the IPPFRD Act and the PA 1978

Although this thesis is primarily concerned with inventions made wholly in the private sector, the IPPFRD Act³²⁴ is instructive in light of its role in furthering innovation goals.³²⁵ The purpose of the IPPFRD Act is to ensure that 'intellectual property emanating from publicly-financed research and development is identified, protected, utilised and commercialised for the benefit of the people of the Republic whether it be for a social, economic, military or any other benefit'.³²⁶ The Act defines 'intellectual property' broadly as 'any creation of the mind that is capable of being protected by law from use by another person...and includes any rights in such creation'.³²⁷ Patentable inventions, including the right to apply for an invention to be registered as a patent, fall squarely within the ambit of the legislation.³²⁸ Therefore,

³²⁰ Act 98 of 1978.

³²¹ Act 193 of 1995.

³²² The CA 1978 and the DA 1993 have been amended by the Intellectual Property Laws Amendment Act, 2013, to allow for the recognition and protection of indigenous knowledge. As the amendment Act is not yet in force and no date for its commencement has been proclaimed, it is not included in this exposition.

³²³ Act 15 of 1976.

³²⁴ Note 319.

³²⁵ See Chapter 3.

³²⁶ Section 2.

³²⁷ Section 1.

³²⁸ DST (n329) 6-8; NIPMO 'Practice Note to Guideline 1 of 2012' 4 December 2012.

in the ensuing discussion reference is made to ‘inventions’ as opposed to ‘intellectual property’ generally.

The IPPFRD Act specifically includes higher education and statutory institutions in its purview.³²⁹ Private sector corporations are affected by the Act where they have collaborated with a recipient of public finance. Consequently, the statutory ownership rules in the relevant enabling legislation must defer to the IPPFRD Act. It is submitted that this allows for the devolution of the right to apply for the patent by operation of law, consistent with sections 27 and 59(1) of the PA 1978. The IPPFRD Act makes no reference to employee-inventors but applies to employee-inventions made with public finance.³³⁰

4.2.2 Entitlement to Employee-made Inventions

The IPPRD Act provides for a default allocation rule that the ‘recipient’ of the public finance owns the invention.³³¹ A ‘recipient’ is ‘any person, juristic or non-juristic, that undertakes research and development using funding from a funding agency and includes an institution’.³³² Recipients are distinguished from ‘intellectual property creators’. An ‘intellectual property creator’ is ‘the person involved in the conception of intellectual property in terms of this Act and identifiable as such for the purposes of obtaining statutory protection and enforcement of intellectual property rights, where applicable’.³³³

³²⁹ IPPFRD Act s1. See also DST Guideline 1 of 2012 ‘Interpretation of the Scope of the Intellectual Property Rights from Publicly Financed Research and Development Act (51 of 2008): Setting the Scene’ GN 1047 GG 35978 of 12 December 2012 19-20.

³³⁰ The Intellectual Property from Publicly Financed Research and Development Bill Gen N 719 GG 29950 of 8 June 2007 (‘IPPFRD Bill’) mentioned employees specifically. For a detailed discussion see Visser C ‘Intellectual property rights from publicly financed research: The way to research hell is paved with good intentions’ (2007) 19 *SA Merc LJ* 367-8; Geyer S, Kelbrick R & Visser C ‘Intellectual Property Law’ (2009) *Annual Survey of SA law* 624-5.

³³¹ IPPFRD Act s4(1).

³³² Section 1. A list of recognised institutions is available.

³³³ *Ibid.*

This default position may be reduced to co-ownership where the intellectual property results from collaboration with a private entity or organisation. In such a case the external funder will be co-owner under certain circumstances.³³⁴ A failure by the private entity or organisation to acquire co-ownership could trigger acquisition by the state.³³⁵

In cases where the recipient 'prefers not to retain ownership in its intellectual property or not to obtain statutory protection for the intellectual property'³³⁶ and gives notice of this choice, the National Intellectual Property Management Office ('NIPMO') may do so.³³⁷ If NIPMO takes assignment, 'the recipient, any private entity or organisation that contributed to funding the research and development ... and relevant intellectual property creators will retain an irrevocable, non-transferable, and royalty-free licence to use the intellectual property for research, development and educational purposes'.³³⁸ This does not affect the rights of a co-owner as contemplated in section 15(2) of the Act. If NIPMO does not acquire ownership, then where the intellectual property was made with a contribution from a private entity or organisation, that contributor has the option to acquire ownership. If there is no such contributor, the 'intellectual property creator' must be given the option by the recipient to acquire ownership and protection.³³⁹

If one considers the above in the employee-invention paradigm, the employee-inventor is the intellectual property creator, and the employer is the recipient of the finance. It equates practically to employees at universities and recognised institutions. Therefore, the employer would be the default owner of the invention and entitled to apply for the patent. In relating this to the PA 1978, which provides the only basis on which to apply for a patent, the provisions of the IPPFRD Act constitute

³³⁴ IPPFRD Act s15(2). See further NIPMO Guideline 4.1 of 2015 31 March 2015.

³³⁵ IPPFRD Act s15(3), read with s14.

³³⁶ Section 4(2).

³³⁷ See IPPFRD Act ss 4(3), 4(2)(b) and 5(1)(e) and s2 of regulations made in terms of s17 of the IPPFRD Act GN R675 GG 33433 of 2 August 2010, which detail the considerations that must inform the decision by the recipient and the NIPMO ('IPPFRD Regulations').

³³⁸ See IPPFRD Regulations s2(12).

³³⁹ See further Adams & Adams *Practitioner's Guide to Intellectual Property Law* (2011) 13-14.

a devolution by operation of law which vests the right to apply for the patent in the recipient-employer.

This interpretation is confirmed by the most recent guideline issued by NIPMO which provides that in the ownership scenario where the '[e]mployee creates outside the scope of employment',

'[p]rivate or outside work may include, amongst others, work completely unrelated to the role of the employee, that does not require usage of any recipient facilities and does not involve the employee employing/or being assisted by a staff member who reports to him/her...In the instance where IP is generated within the general understanding of private work and no public funds are used, the IP generated will fall outside the scope of the IPR Act'.³⁴⁰

Furthermore, it is submitted that whether or not the employee made the invention as part of his or her duties is irrelevant – provided that the invention was made using public finance, the IPPFRD Act will regulate first ownership.

It has been suggested that there must be an assignment from the employee which must conform to section 59(2)(b) of the PA 1978. This means that it is necessary to engage with the 'course and scope' enquiry in that section.³⁴¹ However, it is submitted that this is incorrect and that the IPPFRD Act does not require an assignment as the basis for the acquisition of rights by the recipient-employer in that it vests in the recipient by operation of law. There is no contractual basis for a transfer. Therefore, in an application for a patent under section 27 of the PA 1978, the (employer) recipient would be the applicant, its right to apply having been acquired from the (employee-inventor) IP creator by operation of law (the IPPFRD Act).³⁴² The employee-inventor consequently has no claim to the invention from the

³⁴⁰ NIPMO (n334) s3.1.

³⁴¹ See Van Harmelen J 'Ownership of patentable inventions at academic institutions (Part 2)' 20 March 2013 <https://www.ensafrica.com/news/Ownership-of-patentable-inventions-at-academic-institutions-Part-2?Id=960&STitle=IP%20ENSight> (Date of use 30 November 2015.); Van Harmelen J 'Ownership of patentable inventions at academic institutions (Part 3)' 20 March 2013 <https://www.ensafrica.com/news/Ownership-of-patentable-inventions-at-academic-institutions-Part-3?Id=961&STitle=IP%20ENSight> (Date of use 30 November 2015.).

³⁴² PA 1978 s27(1) read with s59(1) and the IPPFRD Act. See also van der Merwe A 'The Law of Patents' in van der Merwe A (ed) *Law of Intellectual Property in South Africa* (2011) 294.

outset unless he or she is also the recipient. The effect is that the employer owns the invention outright. However, it remains possible that neither the recipient, NIPMO, nor any contributor wants ownership in or statutory protection for the invention, in which case the employee-inventor will, at some point in the chain, have the opportunity to acquire such rights. Consequently, employee-inventors employed by recipients potentially have an opportunity to own the invention.

Interestingly, the early Intellectual Property Rights from Publicly Financed Research Bill provided for a first-ownership rule that: ‘Employees shall be deemed to have assigned their Intellectual Property as set out in this Act to the Institution’.³⁴³ The current formulation, which vests ownership directly in the recipient, appears to be a more efficient regulatory mechanism than a deeming provision.

4.2.3 Rights of the Employee-inventor

4.2.3.1 Financial reward

Among the objectives of the IPPFRD Act is that ‘human ingenuity and creativity are acknowledged and rewarded’.³⁴⁴ To this end, the Act provides specifically for intellectual property creators at institutions to share in the revenue derived from their intellectual property until the expiry of the intellectual property right.³⁴⁵ Therefore, although ownership in an invention made by an employee may vest in the employer, the inventor will always have a claim to the resulting benefits. The inventor must be paid within twelve months of receipt of the benefit by the recipient.³⁴⁶ Outside of this context, employee-inventors do not have a similar right to financial benefits derived from the invention.

³⁴³ IPPFRD Bill (n330) cl 3(2); Visser (n330) 367.

³⁴⁴ Section 2(2)(d).

³⁴⁵ Section 10(1). See s10(2) for the formula and further IPPFRD Regulations (n337).

³⁴⁶ IPPFRD Regulations (n337) s9(1).

4.2.3.2 Attribution

The IPPFRD Act makes no special provision for a right of attribution. The provisions of the PA 1978 apply in this regard.

4.3 COPYRIGHT

4.3.1 The Relationship between Copyright and Patentable Inventions

During the inventive process preparatory materials will be generated alongside the final patentable invention. These may constitute valuable intellectual property in their own right and arise from the efforts of the inventor or other contributors. In the employment context, the preparatory materials are made by employees who can – but need not also be – the inventors. Some preparatory materials, such as compilations of data, written reports, memoranda, flowcharts, and technical drawings, attract copyright and the ownership in these intellectual by-products is established using copyright principles. As a consequence the ownership of copyright in the preparatory materials and the ownership of the patent will not necessarily vest in the same person, even though the intellectual property has been generated as part of a single process. In this chapter, the effect of this dichotomy is examined with compilations of data and technical drawings as examples of preparatory materials which invoke copyright ownership rules. It is also limited to the private sector inventive context.³⁴⁷

South African copyright law, like patent law, has British roots although the current legislation, the CA 1978, is more closely aligned to the Berne Convention for the Protection of Literary and Artistic Works, 1886, ('Berne Convention') to which South Africa is a signatory.³⁴⁸ The influence of the common-law approach with its emphasis

³⁴⁷ Works made under s5 of the CA 1978 are not discussed. For discussion of state copyright see Pistorius T 'Part 3 Copyright Law' in van der Merwe A (ed) *Law of Intellectual Property in South Africa* (2011) 177-8.

³⁴⁸ South Africa has acceded to the Brussels revision and in part to the Paris text of 1971. The first statute to deal with copyright in South Africa was the PDTCA 1916 which was substantially the same

on the economic aspects of the monopoly rather than the Continental author's-right approach, persists.³⁴⁹

Unlike the PA 1978, which defines an invention in relation to what does not constitute eligible subject matter,³⁵⁰ the CA 1978 prescribes a closed list of protectable subject matter or 'works': literary works, musical works, artistic works, sound recordings, computer programs, cinematograph films, broadcasts, program-carrying signals, and published editions.³⁵¹ The definition of 'literary work', which includes 'tables and compilations, including tables and compilations of data',³⁵² would include compilations of data generated during the inventive process. Similarly, technical drawings are accommodated under the definitions of 'artistic work'³⁵³ and 'drawings', the latter is defined to include drawings 'of a technical nature'.³⁵⁴

Unlike patents, and in keeping with South Africa's international obligations under the Berne Convention and the TRIPS Agreement, copyright is not conditional upon registration.³⁵⁵ Therefore, copyright will subsist in a work once the requisite statutory requirements have been met.³⁵⁶ The fundamental requirement for the subsistence of

as the British Copyright Act of 1911. This was followed by the Copyright Act 63 of 1965, modelled on the 1956 British Copyright Act. The current Act must, with effect from 1 January 1979, be read with the Copyright Regulations, 1978, GN R1211 GG 9775 of 1978 7 June 1985 as amended by GN 1375 GG 9807 of 28 June 1985. Further on the historical development, see Copeling AJC 'Copyright' in Joubert WA (ed) *The Law of South Africa* vol 5 (1978) 225-6; Dean O 'Changes to the law of copyright brought by the Copyright Act 98 of 1978' (1979) April *De Rebus* 192; Dean O *Handbook of South African Copyright Law* (2012) 1.3-1.4; Pistorius (n347) 148-54.

³⁴⁹ See Pistorius (n347) 143-8 for more on authors' rights versus copyright. See further Pouris A & Inglesi-Lotz R 'The Economic Contribution of Copyright-Based Industries in South Africa' WIPO/RSA/Institute for Technological Innovation, University of Pretoria, 2011.

³⁵⁰ PA 1978 s25.

³⁵¹ CA 1978 s2(1). See CA 1978 s1(1) for definitions. For a closer examination of the characteristics of these works, see Copeling (n348) 232-8; Dean 2012 (n348) 1.6-1.19; Pistorius (n347) 155-60.

³⁵² Section 1(1) 'literary work'.

³⁵³ Section 1(1) 'artistic work'.

³⁵⁴ Section 1(1) 'drawing'.

³⁵⁵ Berne Convention art5(2) which is incorporated into the TRIPS Agreement.

³⁵⁶ See Copeling (n348) 238; Dean 2012 (n348) [1.27]; Pistorius (n347) 161 n4, 168-70. It is not clear whether a common law requirement of propriety is necessary.

copyright in all works is that they must be 'original'.³⁵⁷ Originality does not imply newness or novelty but merely that work is the product of the independent skill, judgment and labour of the author.³⁵⁸ Unlike patent law, it is possible for copyright to arise in multiple identical works provided they do not involve reproduction. Further requirements are that the literary and artistic works are reduced to a material form³⁵⁹ and that the requirements of authorship and publication in sections 3 and 4 respectively, be met.

The copyright owner enjoys a set of exclusive rights which act as an economic monopoly over the exploitation of the protected works.³⁶⁰ Therefore, literary works and artistic works attract specific combinations of exclusive rights that make up the set.³⁶¹ The core right is reproduction to the exclusion of others. Like patents, copyright is transferable and may be licensed.³⁶² It is also of limited duration.³⁶³

In addition to this economic monopoly, section 20 of the CA 1978 provides for two 'moral rights': the right 'to claim authorship of the work'; and the right 'to object to any distortion, mutilation or other modification of the work where such action is or would be prejudicial to the honour or reputation of the author'.³⁶⁴ Unlike patent law, therefore, there is specific attribution or 'paternity' right. However, the nature and scope of the right is unclear. The reported case law appears to be limited to *Technical Information Systems v Marconi*³⁶⁵ in which it was found that the removal of information identifying the author of a computer program when an adaptation of the

³⁵⁷ Section 2(1). See *Haupt t/s Soft Copy v Brewers Marketing Intelligence* [2006] SCA 39 (RSA) para [35].

³⁵⁸ See *Klep Valves (Pty) Ltd v Saunders Valve Co Ltd* 1987 (2) SA 1 (A) 22; *Appleton v Harnischfeger Corporation* 1995 (2) SA 247 (A) 262; *Haupt* (n357) para [35]. For discussion on the originality requirement see Copeling (n348) 239; Dean 2012 (n348) [3.3]; Pistorius (n347) 163-4.

³⁵⁹ CA 1978 s2(2). Further Dean 2012 (n348) [3.4].

³⁶⁰ The owner's control is in fact extended by s23(2) which provides for secondary infringements which are not specifically termed 'rights' in ss6 and 7.

³⁶¹ CA 1978 s6-7.

³⁶² *Id* s22.

³⁶³ *Id* s3.

³⁶⁴ Section 20(1). There is a limited proviso to this in some cases.

³⁶⁵ 2007 BIP 303 (T).

program had been made, constituted an infringement of the author's moral right to claim authorship of the work.³⁶⁶

This lack of statutory and judicial guidance has resulted in differing views regarding moral rights – for example, the opposing views on the transferability of moral rights. Under one approach, moral rights are authors' personality rights and, as such, cannot be transferred.³⁶⁷ An alternative view is that moral rights are transferable³⁶⁸ – in part because they are statutory rights rather than true personality rights. The duration of moral rights is similarly contested with some arguing that because they are personality rights, they can only endure for the lifetime of the author.³⁶⁹ The counter argument is that they endure for while copyright endures and can, in some cases, survive the death of the author.³⁷⁰ However, it appears to be accepted that an author may choose not to enforce his or her moral rights.³⁷¹

4.3.2 Entitlement to Copyright in the Employment Context

4.3.2.1 Authorship as the basis for ownership

Unlike the patent law approach, there is express statutory provision for the allocation of first ownership in copyright in literary and artistic works made in the employment context. These are formulated as exceptions to a general vesting of default ownership in the author of the work.³⁷² Only those relevant to compilations of data

³⁶⁶ Id para [56].

³⁶⁷ See Dean O 'Protection of the Author's Moral Rights in South Africa' (1996) 59 *Copyright World* 38 39; Dean 2012 ((n348) [10.3], [10.9].

³⁶⁸ See Pistorius (n347) 194.

³⁶⁹ See Dean (n367) 40-1; Dean 2012 (n348) [10.5]. However, that the 'author's moral right endures for the duration of the term of copyright in the work and is a right which always attaches to the author or his heir, notwithstanding the fact that the author might have assigned the copyright in his work to someone else.' Dean 1979 (n348) 1) 196. This suggests that moral rights can be transferred and appears contradictory to his later view that moral rights only endure for the life of the author.

³⁷⁰ See Pistorius (n347) 181.

³⁷¹ Dean 2012 (n348) [10.9].

³⁷² See s21.

and technical drawings as literary and artistic works, respectively, are discussed here.

Section 21(1) of the CA 1978 provides that copyright will ‘vest in the author or, in the case of a work of joint authorship, in the co-authors of the work’.³⁷³ In some respects, authorship is akin to inventorship in patent law. However, unlike patent law which does not define ‘inventor’, the CA 1978 provides definitions of ‘author’ which vary depending on the type of work in question. Therefore, the author of a literary or artistic work is ‘the person who first makes or creates the work’.³⁷⁴ This means that under section 21(1)(a) both the employer and employee-author can claim under this title if they meet the definition of ‘author’. This, in turn, depends on the meaning of ‘makes or creates’ which is a reflection of the nature of the contribution to the literary or artistic work required to secure ownership.

Although the requirement of originality appears to indicate that the author’s input need not be substantial or meritorious, the courts have held that as regards literary works, it is not sufficient for one to simply be the mechanical means by which an idea has been reduced to a material form.³⁷⁵ There must be an intellectual contribution to the expression of the idea. On this basis, a contribution of resources, for example financial investment in the inventive process, would not sustain a claim to authorship. For the employer, whose contribution is resource-based, this approach would exclude it from ownership on the basis of authorship.

A related issue is whether the definition sustains an interpretation that supports juristic authorship. In other words, could the employer ‘create’ or ‘make’ the work through the agency of its employees’ intellectual contribution? The position in respect of literary and artistic works has not been settled, but it is submitted that the approach inherent in the CA 1978 is not to exclude juristic authorship outright.³⁷⁶ For some works authorship is clearly removed from the individuals involved; for example, the author of a computer programme is ‘the person who exercised control over the

³⁷³ Section 21(1)(a).

³⁷⁴ Section 1(1) definition of ‘author’.

³⁷⁵ See, for example, *Peter-Ross v Ramesar and another* 2008 BIP 306 (C).

³⁷⁶ This is evident from s3 which provides that a qualified person can include a juristic person.

making of the computer program³⁷⁷ and for sound recordings and cinematographic films, the author is ‘the person by whom the arrangements for the making’ of such work are made.³⁷⁸ This reflects the reality of the corporate development of works and is captured in the observation by the Supreme Court of Appeal that ‘[t]he definition of ‘author’ in s1 also covers a large number of persons who, in the ordinary sense of the word, are not authors but persons with financial interests in the end result’ and that ‘[o]ne consequently does not have to be a cynic in order to be skeptical about the philosophical premise’.³⁷⁹

4.3.2.2 Statutory allocation of ownership in employee-authored works

Under section 21(1)(a) the employee as author will generally be the first holder of copyright. However, this is subject to three exceptions set out in section 21(1)(b), (c), and (d).³⁸⁰ With regard to the literary and artistic works under discussion, only section 21(1)(d) is directly relevant.

Section 21(1)(d) creates a first-ownership rule in favour of an author’s employer for all works made in the course of employment. It provides that where ‘a work is made in the course of the author’s employment by another person under a contract of service or apprenticeship, that other person shall be the owner of any copyright subsisting in the work by virtue of section 3 or 4’.³⁸¹ Although this is not an assignment of copyright from the employee to the employer but rather a statutory first-ownership rule,³⁸² the employer and employee-author may agree to exclude its

³⁷⁷ Section 1(1) definition of ‘author’ (j). See *Haupt* (n357) para [41]. See further Tong L ‘Authorship of computer programs under South African copyright law: *Haupt t/a Softcopy v Brewers Marketing Intelligence (Pty) Ltd* 2005 SALJ 518-9; 522-3; and Tong L ‘Copyright protection for computer programs in South Africa: Aspects of *sui generis* categorization’ (2009) 12 *JWIP* 273-5.

³⁷⁸ Section 1(1) definition of ‘author’ (c), (d). For more on the nature of authorship see Copeling (n348) 230-1; Dean 2012 (n348) [1-31]-[1-33].

³⁷⁹ *Biotech Laboratories (Pty) Ltd v Beecham Group plc* par [12].

³⁸⁰ See discussion in Tong L ‘Employee-made intellectual property: Statutory considerations for the contractual regulation of ownership’ (2015) 36 *Industrial Law Journal* 870.

³⁸¹ Section 21(1)(d).

³⁸² See Tong 2009 (n377) 276.

operation,³⁸³ in which case the default rule that the author is the first owner applies.
³⁸⁴ In the employment context it is, of course, unlikely that the employer would readily enter into an agreement excluding the operation of section 21(1)(d).

There are two main elements in the application of this provision: firstly, whether the author must be under a 'contract of service' or contract of 'apprenticeship'; and secondly, whether the work has been made 'in the course of the author's employment'³⁸⁵ by the other party to the contract of service or apprenticeship. In the absence of statutory guidance, it has been left to the courts to provide meaning and so to determine the scope of the provision.

With regard to the first issue, this provision is relevant only when there is a 'contract of service' or 'contract of apprenticeship' in terms of which the author is employed by the other party. The author's status as an employee means that he or she will be affected by the provision,³⁸⁶ although it must be noted that the CA 1978 does not use the terms 'employee' or 'employer' in this provision. In the absence of a statutory definition, the courts have interpreted the provision to refer to the distinction between contracts *of* service and contracts *for* services which is made under the common-law.³⁸⁷

In *Marais v Bezuidenhout*³⁸⁸ the architect's client argued that the copyright in building plans produced by the architect vested in the client by virtue of section 21(1)(d). The client regarded itself as the 'other person' for the purposes of the provision. The

³⁸³ See *Freefall Trading 211 (Pty) Ltd v Proplink Publishing (Pty) Ltd* 881 JOC (C) para [16]; *Marais v Bezuidenhout* 1999 (3) 988 (W) 991.

³⁸⁴ CA 1978 s21(1)(e). There is no indication that the agreement must be in writing or comply with any formalities. See *Stiff v Reid-Daly* 2004 BIP 240 (W). See further Copeling ACJ *Copyright Law in South Africa* (1969) 25 in relation to the CA 1965 s5(4).

³⁸⁵ Section 21(1)(d).

³⁸⁶ See further Klopper H 'Copyright in works produced in the course of employment' (2010) 73 *THRHR* 477-8 for the importance of this aspect and its effect on the determination of the second element, namely what 'course of employment' means. See also Dean 2012 (n348) [5.3.3] to 1-23

³⁸⁷ See for example *Marais* (n383); *Ferntext (Pty) Ltd v Premier Springs Industrial Manufacturers (Pty) Ltd* 838 JOC (T); *Trewella Bros (UK) Ltd v Deton Engineering (Pty) Ltd* 57 JOC (A).

³⁸⁸ Note 66.

court rejected this reasoning and confirmed that the reference to section 21(1)(d) was to a contract of service as envisaged in the employment context. According to Cloete J observed that '[t]here can be no doubt that the phrase 'contract of service' in s 21(1)(d) does not include a contract of work. If it did, para (c) would (except for the remuneration aspect) be superfluous, and so would the words 'under a contract of service or apprenticeship' in para (d) itself'.³⁸⁹ More specifically, the distinction between the two situations was that of a contract of service (*locatio conductio operarum*) and a contract of work (*locatio conductio operis*) as found in *Smit v Workmen's Compensation Commissioner*.³⁹⁰ An architect could not be said to be an employee in terms of this common-law distinction.

In *Ferntex (Pty) Ltd v Premier Springs Industrial Manufacturers*³⁹¹ similar reliance was placed on *Smit v Workmen's Compensation Commissioner*.³⁹² The court had to determine 'whether the artists [of a fabric design] entered into a contract of service (*locatio conductio operarum*) or into a contract of work (*locatio conductio operis*)'.³⁹³ It was noted in deciding which of the two work contract applied, '[o]ne of the most important indications that a contract is indeed a contract of service is the element of control which the employer retains over the employee and the way the latter performs his task'.³⁹⁴ There was no question that there had to be recourse to the common-law employment contract. In this case, despite the fact that the alleged employer 'involved herself in the process which led to the eventual product, and may have participated enthusiastically in the conceptualisation thereof, she did not, would not and could not exercise control over the way in which the art work was developed and produced'.³⁹⁵

³⁸⁹ Id 990.

³⁹⁰ Id 990. *Smit v Workmen's Compensation Commissioner* 1979 (1) SA 51 (A).

³⁹¹ Note 387.

³⁹² 1979 (1) SA 51 (A).

³⁹³ *Ferntex* (n387) 846.

³⁹⁴ Ibid. See further Masanzu K 'The silent debate: Ownership of copyright in literary works within universities' (2014) 2 *IPLJ* 74.

³⁹⁵ *Ferntex* (n387) 846; also Haupt (n357) para [41].

While both cases relied on *Smit*, the court in *Ferntex* recognised that there is no definitive test as to whether a person is an 'employee', and that the tests may change over time. Neither court considered the actual facts of *Smit* or why the court sought to distinguish between contracts of service and contracts of work. Therefore, the inherent difficulty in relying on the common law is that it is always uncertain which factors and approach the court will take as indicative of a contract of service in the context of the CA 1978. Similarly in *Nel and Another v Ladismith Co-Operative Wine Makers and Distillers Ltd*³⁹⁶ the court had to interpret the meaning of 'contract of service'. It found, based on the authority of *Marais v Bezuidenhout* amongst others, that the 'contract of service referred to in section 21(1)(d) is the contract known in our law as *locatio conductio operarum*'.³⁹⁷

In these cases there is little interrogation of the context in which the distinction is made in *Smit*. The concerns raised in Chapter 3 about the challenges attendant on finding an employment relationship, would arise in this context as well.

The second issue raised by section 21(1)(d) is the determination of whether the work was made in the 'course of employment'. The significance of this phrase in the allocation of ownership between employers and employees makes the Supreme Court of Appeal's decision in *King v SA Weather Service* particularly important, given the previous absence of guidance.³⁹⁸

King was employed as a meteorological technical officer by the SA Weather Bureau.³⁹⁹ He wrote various computer programs during his period of employment –

³⁹⁶ [2000] 3 All SA 367 (C).

³⁹⁷ *Nel and Another v Ladismith Co-Operative Wine Makers and Distillers Ltd* [2000] 3 All SA 367 (C).

³⁹⁸ *King v SA Weather Service* (716/2007) [2008] ZASCA 143 (27 November 2008) ('SCA').

See, for example, Blignaut H 'Copyright and employees – *King* flies into a storm' (2007) Oct *De Rebus* 26; Klopper (n386) 475; Masanzu (n394); Muswaka L 'Ownership of copyright in works created in the course of employment: *King v South African Weather Services* 2009 3 SA 13 (SCA)' (2011) 2 *Speculum Juris* 105; Tong 2009 (n377) 266ff; Tong (n380); Visser C 'Copyright in works created in the course of employment: The Supreme Court of Appeal gives guidance. *King v South African Weather Service*' (2009) 21 *SA Merc LJ* 591; Honey E & Alberts W 'Ownership of copyright by employers' (2009) October *Without Prejudice* 31.

³⁹⁹ SCA paras [2], [4].

partly in his own time and partly at work – which he used to perform his duties which included transmitting weather data and generating reports. There was no dispute that King was the author of the computer programs.⁴⁰⁰ However, both he and his employer claimed ownership of copyright in the programs: King on the basis of section 21(1)(a); and the employer in terms of section 21(1)(d). The main point for the appeal court was whether King had authored the programs in the course of his employment.

The High Court in *King v SA Weather Services*⁴⁰¹ (*'King TPD'*) found for SA Weather Bureau which based its argument on a combination of delictual principles and American jurisprudence.⁴⁰² Interestingly, even though the court acknowledged that the principles of copyright and delict differ, it nevertheless appeared to rely on the latter to justify a broad interpretation of section 21(1)(d). Claassen J noted that 'it seems to me that a distinction might well be drawn between cases dealing with copyright and cases dealing with delict. It would seem to me that in cases of copyright a rather wider than a narrower meaning can be or should be ascribed to the words "course of employment", because it is not punitive or disciplinary in nature as being saddled with another's wrongful acts'.⁴⁰³ However, the court also appeared to rely on delict to determine whether King's actions in fact fell within the course of employment. In this respect the court considered that if one adopted a delictual approach – which it regarded as fairly flexible – then 'in general, where the employee's actions generally are in line with the employer's business, enhances it and or facilitates either the employee's own functioning as an employee or the functions of the employer, it would fall within the course of his employment'.⁴⁰⁴

King appealed. The Supreme Court of Appeal upheld the decision of the court *a quo*, but rejected its reliance on the USA position and on delict. As regards the USA position, the court found that 'agency law principles, which were developed in the

⁴⁰⁰ Id para [12].

⁴⁰¹ 1007 JOC (T) 1007.

⁴⁰² TPD 1013-16.

⁴⁰³ Id 1017.

⁴⁰⁴ Id 1013.

context of tort law, do not necessarily fit the copyright context'.⁴⁰⁵ In relation to reliance on the delictual principles of vicarious liability, they too did not necessarily fit the copyright context.⁴⁰⁶ Harms JA noted that '[a]gain, it appears to be wrong to apply delictual "principles" without more to determine questions of ownership in the arcane area of copyright especially since policy considerations must differ'.⁴⁰⁷

The approach of the Supreme Court of Appeal was that the phrase 'in the course of employment' had in the main always been part of South African law, and that it is 'a stock concept in employment law' which is 'unambiguous and does not require anything by way of extensive or restrictive interpretation. A practical and common sense approach directed at the facts will usually produce the correct result'.⁴⁰⁸ Furthermore, the court pointed out that to formulate general principles would be 'dangerous'. Instead, its decision was to be regarded as one based simply on the facts. The determination was not limited to whether it fell within the terms of his contract of employment that King write computer programs.

The factors leading the court to find that the programs had been made in the course of employment, related to the employer's business, were to the advantage of the employer, and had been incorporated into the employer's system.⁴⁰⁹ Whether or not something was made in the course of employment, was not to be determined by 'dissecting the employee's task into its component activities' but had to be considered broadly.⁴¹⁰ It was not part of Kings' job as a meteorologist to write programmes and he would not have been remiss had he not written them. However, he had done so in order to fulfil his functions as a meteorologist. Of particular significance was the finding that 'his employment was the *causa causans* of the programs'⁴¹¹ given that some 'were specifically written for other weather stations of the employer at their request and for their use. They were not created for external

⁴⁰⁵ SCA para [16].

⁴⁰⁶ Ibid.

⁴⁰⁷ Ibid.

⁴⁰⁸ Id para [13].

⁴⁰⁹ Id para [18].

⁴¹⁰ Id para [19].

⁴¹¹ Id para [20].

use by others; instead, they were purely work related. Importantly, the employer prescribed the format of the programs and had to approve of them before they could be implemented and used in the system'.⁴¹²

This approach clearly has far-reaching effects, even if the court was not formulating general principles. Klopper, for example, argues that the judgment fails to take into account the significance of the element of control that characterises the contract of service. He notes that the

element of authority and control is of particular significance. This element distinguishes a contract of service from a contract of work and at the same time gives substance and meaning of 'in the course of employment' as used by the legislature in section 21(1)(d)...It is only when a copyright work is created under control and direction of an employer that it can be said that it was done in the course of employment.⁴¹³

Consequently, according to Klopper,

[w]here a copyright work affected by s 21(1)(d) is created, this means that the employer must have the power, ability or right to direct the inception and execution of the work. It cannot be said that such work was created 'in the course of employment' if either the work falls outside the agreed services and where therefore the employer could not or did not exercise any authority in relation to the creation of the work.⁴¹⁴

The point is valid. Even if one accepts that the duties of an employee are not confined to what was expressed in the actual contract when it was concluded, those duties must nevertheless be determined by considering the employee's daily tasks or other actions. It cannot be that all activities performed by an employee while 'on duty' automatically fall to be regulated as duties to the employer. This brings into play the very concerns that have plagued labour law: how to determine who qualifies as an employee. Alternatively, if 'course of employment' simply means 'during the period of the employment relationship', then the application in *King* is beyond criticism. Indeed it may be argued that the rationale for copyright is different – hence this approach.

⁴¹² Id para [20].

⁴¹³ Klopper (n386) 478.

⁴¹⁴ Ibid.

However, the Klopper's view holds that this would require that the term 'contract of service' be overlooked because the term itself is associated with a specific, restrictive approach to whether or not the parties are in an employment relationship. The SCA by no means overlooked the characterisation of the relationship as one of a contract of service in the common law sense.

While the decision may certainly appear to speak to the concerns of employers in securing a return on their contribution to the development of intellectual material, it is unfortunate that the court did not elaborate on the copyright policy issues that supported a finding in favour of the employer. Although the outcome may have been the same had delictual principles or foreign jurisprudence been relied upon, the Supreme Court of Appeal rejected these because their underlying policies differ from copyright. However, what the court failed to do, was to be explicit about what those copyright policies are or even what policies, if any, informed the decision. Instead, it claimed to be relying on standard employment law principles to give effect to the copyright policies. Given that labour laws also develop in response to policy concerns, and that there is arguably no 'stock concept' of 'course of employment',⁴¹⁵ reliance on labour law in the copyright context ought possibly to attract the same circumspection as reliance on delict, or even on foreign jurisprudence.

4.3.2.3 Comment on CA 1978 section 21(1)

The provisions of section 21(1) have been part of South African copyright law since the PDTCA 1916 which incorporated section 5(1) of the British Copyright Act of 1911.⁴¹⁶ This situation subsisted until the introduction of the CA 1978 when the provisions were removed leaving as default position, that: '(1) The copyright conferred by sections 3 and 4 shall vest in the author, or in the case of a work or joint authorship, in the co-authors of the work'.⁴¹⁷ The reason for this, as explained by Harms JA in *Biotech Laboratories (Pty) Ltd v Beecham Group plc*,⁴¹⁸ was that

⁴¹⁵ See Ch 3 for a discussion of labour law in South Africa.

⁴¹⁶ British Copyright Act 1911 s5(1).

⁴¹⁷ CA 1978 s21; Gen N 1349 GG 6092 of 30 June 1978. See further *Marais* (n383) 990-1; Dean 1979 (n348) 192-3; Visser (n398) 596-7.

⁴¹⁸ 2002 (4) SA 249 (SCA).

'[t]he present Act, in its original form, attempted to be kinder to authors. The concept of "copyright" was replaced with an author's right, the "ownership" of which vested principally in the author. In this and other regards the object was to move in the direction of Continental law, where the emphasis is on the rights (moral and other) of the author and not on the economic rights of employers and entrepreneurs'.⁴¹⁹

Copeling supports this view; when the Act was introduced without the provisions, he noted that

'[a]lmost certainly, the legislature's decision to delete these additional exceptions from the Act of 1978 was prompted by the consideration that, whatever their merits on the grounds of expediency, they did not justify the erosion of the author's inherent right to dispose of the fruits of his creative ability according to the manner of his own choosing'.⁴²⁰

However, this position was soon substituted with a move back to the original approach in the Copyright Amendment Act 56 of 1980⁴²¹ 'when from a practical view it was considered no longer expedient to continue without them'.⁴²² Consequently, the provisions were absent between the commencement of the Act on 1 January 1979 and the commencement of the Amendment Act on 23 May 1980. In the words of the Supreme Court of Appeal, '[t]he good intentions did not last and hardly a year had passed when the Legislature (by amending s 21) reverted, as far as ownership was concerned, to the Anglo-American model where commercial rights tend to reign supreme'.⁴²³

The Act does not restrict employers and employees who contract over copyright. Therefore, the parties may agree that the employee will assign copyright in works made during the period of employment but falling outside the course of employment, either as part of the employment contract, or in terms of a separate agreement. The protections offered by patent legislation are not evident here.

⁴¹⁹ Id para [12].

⁴²⁰ Copeling (n384) 232.

⁴²¹ Copyright Amendment Act 56 of 1980 s9, commenced 23 May 1980.

⁴²² Pistorius (n347) 175 n3.

⁴²³ *Biotech* (n418) para [12].

From this it appears that the Act is clearly designed to facilitate corporate ownership of copyright works. It seems that the references to labour and employment are not geared towards the protection of employees but rather to facilitate a default position in favour of the employer who would otherwise have had to incur transaction cost of contracting with the employee.

4.3.3 Attribution of Authorship in the Employment Context

The author's entitlement to be associated with the literary or artistic work manifests in the two moral rights provided in section 20(1). Section 20 is the only reference to moral rights in the CA 1978, and the ownership provisions of section 21 do not apply. Consequently, only the author of the literary or artistic work can be vested with moral rights at the outset. Generally, where an author assigns copyright the moral rights remain with him or her. Whether or not the author can choose also to assign the moral rights to the same or a different assignee, depends on whether one accepts that moral rights can be transferred. As explained earlier, there are conflicting views on this.

As there are no specific provisions addressing the employment situation, the general provisions of section 20, together with the statutory definition of 'author', apply. Consequently, where an employed author is vested with copyright and transfers it to another party, he or she retains the moral rights to the work, as with any other author. However, the situation is arguably different where the employee-author is not the first copyright holder, as would be the case under section 21(1)(d). There are different views on the vesting of moral rights when the first-ownership rules created by section 21(1) of the CA 1978 apply.

One view is that the first-ownership rule does not affect the vesting of moral rights in the employee-author. Dean notes that '[t]he same applies where there is from the outset the separation between authorship and ownership of copyright, e.g. in the

case of a work made by an employee'.⁴²⁴ This coincides with Pistorius's view where she states that 'despite the fact that copyright vests in the employer when the work was created by his or her employee in the course of the author's employment under a contract of service, the employee-author is still able to enforce his or her moral rights in the work'.⁴²⁵ On this approach, even though the employer would own the copyright, this would be subject to the employee-author's moral rights; a result also achieved by applying article 6*bis* of the Berne Convention – the origin of the provision in the legislation.

However, the wording of the Berne Convention differs slightly from that of the CA 1978 in that, while the Convention uses the phrase '[i]ndependently of the author's economic rights, and even after the transfer',⁴²⁶ the CA 1978 excludes 'independently of'.⁴²⁷ It is this difference, combined with section 21(1)(d), that forms the basis for the alternative view that moral rights do not arise when works subject to the first-ownership provisions of section 21(1) are made. The argument is that the CA 1978 does not provide for moral rights to arise independently of copyright.⁴²⁸ In fact, when moral rights were introduced into the Act, they appeared as 'residuary rights'⁴²⁹ – ie rights that arise when the copyright is transferred which are residual in that they are what remains with the author.⁴³⁰ Since the effect of the first-ownership rules in section 21(1) is that the employee-author is not vested with copyright at all, no copyright assignment from the employee-author to the employer can take place, and no moral rights can arise. Further, as the employer is not the author of the work under the definitions in the CA 1978, it too has no basis on which to claim moral rights even though it has been vested with copyright. This approach avoids the arguably untenable situation were employee-authors to retain moral rights in works

⁴²⁴ Dean 1979 (n348) 42. See also Dean O 'The employee and the Copyright Act: A pitfall for many employers' (1979) 1 *Businessman's Law* 71-2.

⁴²⁵ Pistorius (n347) 178.

⁴²⁶ Berne Convention art 6*bis*.

⁴²⁷ CA 1978 s20(1).

⁴²⁸ See Visser C 'The location of the parody defence in copyright law: Some comparative perspectives' (2005) 38 *CILSA* 337-8; Tong L 'The effect of employee-authors' moral rights on employer-owned copyright: Surviving art6*bis* of the Berne Convention' (2014) 24 *SA Merc LJ* 321.

⁴²⁹ Copyright Act 98 of 1978 Gen N 1349 GG 6092 of 30 June 1978. See Copeling (n348) 290.

⁴³⁰ For an analysis of s20 in relation to employee-made works, see Tong (n428) 321-323.

owned by their employer.⁴³¹ It is also one which aligns with s21(1)(d) which aims to facilitate control by employers.

Alternatively, if moral rights are transferable the parties may agree to transfer them to the employer.

4.4 REGISTERED DESIGN RIGHTS

4.4.1 The Relationship between Industrial Designs and Patents

While a patent protects the idea underlying a product, the visual appearance of the product is more appropriately protected through a design right. Therefore, during the development of an invention, the final physical form of the product could constitute a registrable industrial design independent of the patent. Because they are not mutually exclusive, both forms of protection can arise in relation to a single product. There may also be situations in which reliance is placed on design protection because the underlying technology is not patentable. In such cases, others may use the technology but are limited in how the replicable product ultimately looks.

Like patent law, the development of a registered design right in South Africa has its roots in the British system,⁴³² although the current enabling legislation – the Designs Act 195 of 1993 ('DA 1993')⁴³³ – introduced a distinction between aesthetic and

⁴³¹ See for example, Tong (n428) 316-7.

⁴³² The first statute that provided for design protection after the union of South Africa, was the PDTCA 1916. The Designs Act 57 of 1967 which was based on the British Designs Act of 1949 followed.

⁴³³ Assented to 22 December 1993, commencement date 1 May 1995. There is one set of Designs Regulations published under the Designs Act, of 2 July 1999. For more on the historical development of the design laws in South Africa, see Pistorius T & van der Merwe A 'Part 4 The law of Registered Designs' in van der Merwe, A ed *Law of Intellectual Property in South Africa* (2011) 446-50; du Plessis E 'The Designs Act in its International Context' in Visser C (ed) *The New Law of Trade Marks and Designs* (1995) 57-8; Job C 'Spare Parts and Integrated Circuits' in Visser C (ed) *The New Law of Trade Marks and Designs* (1995) 86-90.

functional designs – an unorthodox approach which does not accord with the internationally accepted approach which does not make this distinction.⁴³⁴

Under the DA 1993 industrial designs for articles may be registered as both a functional and an aesthetic design and in one or more class.⁴³⁵

An 'aesthetic' design is defined as one which is 'applied to any article, whether for the pattern or the shape or the configuration or the ornamentation thereof, or for any two or more of those purposes, and by whatever means it is applied, having features which appeal to and are judged solely by the eye, irrespective of the aesthetic quality thereof'.⁴³⁶ A 'functional' design is one which is 'applied to any article, whether for the pattern or the shape or the configuration thereof, or for any two or more of those purposes, and by whatever means it is applied, having features which are necessitated by the function which the article to which the design is applied, is to perform'.⁴³⁷

The criteria for protection reveal both differences and similarities. Both require that the design be 'new'.⁴³⁸ This imposes an 'absolute novelty' standard requiring that the design be different from, or not form part of, the state of the art immediately before

⁴³⁴ For more on this, see Pistorius & van der Merwe (n433) 231. See also for the effect of this distinction on the overlap between copyright and industrial design protection, specifically the use of copyright to protect functional designs historically: Dean O 'The great copyright controversy' (1988) July *De Rebus* 469; Dean O 'The Interplay between Copyright and Design Protection' Designs' in Visser (n114) 78-84. Dunlop A 'The Protection of Aesthetic Designs' in Visser (n114) 349ff; Dunlop A 'Do people understand the implications of industrial copyright protection' (1988) May *De Rebus* 349; Momberg D 'The design copyright issue' (1980) March *De Rebus* 129; Pistorius T 'Aesthetics and economics? An overview of the copyright protection of utilitarian works in South Africa' (2006) 2 *Speculum Juris* 141; du Plessis (n433) 59-61 and 65-6 for comment on whether the Act complies with the Paris Convention and the TRIPS Agreement.

⁴³⁵ DA 1993 s14(4), 15. For further discussion of the intrinsic and extrinsic requirements for registrability, see Pistorius & van der Merwe (n433) 232-43; Burrell T *South African Patent and Design Law* (1999) 453-60. See also *Bayerische Motoren Werke Aktiengesellschaft v Grandmark International* (722/12) [2013] ZASCA 114 (18 September 2013) para [7].

⁴³⁶ DA 1993 s1(1) definition of 'aesthetic design'. See further *Clipsal Australia (Pty) Ltd v Trust Electrical Wholesalers* [2007] SCA 24 RSA para [8].

⁴³⁷ DA 1993 s1(1) definition of 'functional design'.

⁴³⁸ DA 1993 s14(1)(a); DA 1993 s14(1)(b).

the date of application or the release date.⁴³⁹ It is therefore similar to the 'newness' requirement in the PA 1978. Further, an aesthetic design must also be original,⁴⁴⁰ while a functional design must not be commonplace.⁴⁴¹

The nature of the statutory monopoly is economic and there is no express right of attribution which recognises the creator of the design. The effect of a registration of an industrial design is similar to that of a patent. The registered proprietor, defined as the 'person whose name is for the time being entered in the register as the proprietor of the design',⁴⁴² has the right 'to exclude other persons from the making, importing, using or disposing of any article included in the class in which the design is registered and embodying the registered design or a design not substantially different from the registered design, so that he shall have and enjoy the whole profit and advantage accruing by reason of the registration'.⁴⁴³ Like patents, the rights in an application for registration of the design or in the registered design can be assigned and devolved by operation of law.⁴⁴⁴ The duration of protection is, generally speaking, fifteen years for the former, and ten years for the latter.⁴⁴⁵

The rights may be revoked on a number of grounds, including that the application was not made by a person entitled to do so, and that the application was in fraud of the rights of another person.⁴⁴⁶

⁴³⁹ DA 1993 s14(2) and (3); read with s1(1) definition of 'release date', s14(2) proviso. See *Clipsal Australia (Pty) Ltd v Trust Electrical Wholesalers* paras [13], [14], [17]. For further discussion of the newness requirement, see Pistorius & van der Merwe (n433) 236-40.

⁴⁴⁰ It has been put forward that the meaning is similar to that in copyright law (*Clipsal* (n436) para [20]. This appears to be supported Pistorius & van der Merwe (n433) 240; du Bois M & Visser C 'Aesthetic design rights to spare parts? *Bayerische Motoren Werke Aktiengesellschaft v Grandmark International (Pty) Ltd*' (2013) 25 *SA Merc LJ* 91. However, such reliance on copyright has been criticised, see Joffe F 'Designs registered under the Designs Act' (2007) 15 *JBL* 26.

⁴⁴¹ DA 1993 s14(1)(b). See further for the meaning of 'commonplace', Pistorius & van der Merwe (n433) 241; see also du Plessis (n433) 59-62 for comment prior to case law on the provision.

⁴⁴² Section 1(1).

⁴⁴³ Section 20(1).

⁴⁴⁴ DA 1993 s29.

⁴⁴⁵ DA 1993 s22(1)(a)-(b) for details.

⁴⁴⁶ DA 1993 s31. For further discussion of grounds for revocation of a design registration see Cilliers L 'Chapter 7 designs' in Dean O & Dyer A (eds) *Introduction of Intellectual Property Law* (2014) 318-21.

4.4.2 Entitlement to Registered Designs in the Employment Context

An industrial design right only arises through registration and the right to apply for registration is limited to the ‘proprietor’ of the design, including joint proprietors.⁴⁴⁷ Under the definition of ‘applicant’, this is extended to the ‘legal representative of a deceased applicant or of an applicant who is a person under legal disability’.⁴⁴⁸ The DA 1993 makes no provision for alternative ways of determining first ownership and consequently, the definition of ‘proprietor’ operates as a first-ownership rule.

Practically, first ownership is decided by whether the applicant is a proprietor. The DA 1993 defines a ‘proprietor’ as:

‘(a) the author of the design; or (b) where the author of the design executes the work for another person, the other person for whom the work is so executed; or (c) where a person, or his employee acting in the course of his employment, makes a design for another person in terms of an agreement, such other person; or (d) where the ownership in the design has passed to any other person, such other person’.⁴⁴⁹

There does not appear to be any reported case law on this provision or its predecessor, section 1(1) the DA 1967, which echoed the provision save for (c). It is submitted that an approach akin to that in section 21(1) of the CA 1978 ought to be adopted in interpreting the definition so that subsection (a) will only hold true if it is not excluded by either (b), (c), or (d). In addition, (b), (c) or (d) will apply in that order. This will ensure that there are no conflicting claims to proprietorship as a consequence of multiple parties meeting the definition.

The starting point in determining first ownership is subsection (a) of the definition of ‘proprietor’. This subsection provides that ‘the author of the design’ is the proprietor. There is no definition of ‘author’, and the term does not arise anywhere else in the legislation, save for subsection (b). However, it is submitted that the ‘author’ here

⁴⁴⁷ Section 14(1) and (7). A failure to comply with the requirements of s14(1) constitutes grounds for revocation of the design right. See DA 1993 s31(1) for the grounds for revocation

⁴⁴⁸ Section 1(1) definition of ‘applicant’.

⁴⁴⁹ Section 1(1).

plays a similar role to that of the ‘inventor’ in the PA 1978, and that the determination of ‘author’ is a necessary preliminary issue to the entire proprietorship enquiry.⁴⁵⁰

According to Burrell, the term

‘must consequently be given its ordinary meaning which denotes the person who really represents or creates or gives effect to the idea or fancy or imagination; the person who is most nearly the effective cause of the design when completed; the person who creates the novelty. Whether or not a person is the author of any particular work is thus in the nature of things always a question of fact’.⁴⁵¹

On this approach, authorship relates to more than simply acting as an amanuensis or conduit for another. Where individuals are actually involved in the creation of the design, the determination of authorship (and hence possible joint proprietorship) boils down to whether the nature of the contribution can sustain a claim to authorship – a matter ultimately to be resolved by the courts.

Likewise, the question of whether authorship can inhere in a juristic person is not clear. In this regard the concerns raised in the copyright context in relation to literary and artistic works, arise equally here. If we proceed on the basis that the employee is the author of a design, this leads to the conclusion that the employee is entitled to apply for the design and to be the first registrant – unless any of the other provisions of the definition apply. Of course, if the meaning of ‘author’ is sufficiently wide to include juristic persons, the employer could possibly claim authorship, albeit based on the employee’s actual intellectual contribution. The rest of this analysis proceeds on the basis that the employee is the author.

The definition of proprietor in (a) is excluded if the situation in (b) arises. Subsection (b) provides that ‘where the author of the design executes the work for another person, the other person for whom the work is so executed’ will be the proprietor. It is submitted that ‘execution’ refers simply to perform, or do, or to carry out the work necessary to be an author of the design. The crux of the provision, at least for the allocation of proprietorship between the employee and employer, lies in the meaning

⁴⁵⁰ See Joffe (n440) 27.

⁴⁵¹ Burrell (n435) 461 (footnotes omitted).

of 'for another person'. It is submitted that this means that the design must have been made for the benefit of the other person, or possibly at the other person's behest.

If we assume that the employee is the author, then the design will, as explained above, be owned by the person for whom the design was executed. The 'other person' is the proprietor. According to du Plessis, this provision may be used to create a first-ownership rule in favour of the employer. She notes that '[t]he principle appears to be that the employer will be the proprietor of a design where the employee executed the design **for** the employer, i.e. in the performance of his/her duties, or, in other words, in the course and scope of his/her employment'.⁴⁵² There is nothing to refute this interpretation although it is subject to juristic persons qualifying as the 'other person'. On this basis, if the employer can show that the work was 'executed' by the employee-author for the employer, there is nothing to prevent the employer from claiming proprietorship under this definition. However, the employer would have to show that the employee was in fact executing the work for it. The only way for the employer to do this, is to show that the work was executed in terms of an agreement. It is submitted that the agreement could be a term in the employment contract or in any other agreement. However, as will be discussed later, in the former case there may be restrictions on what can be agreed upon.

While it is conceivable that in many instances the effect of the relationship between the employer and employee may be construed to find that the making or execution of the design was for the employer, the provision certainly does not translate into a rule that designs made by employees during employment fall to the employer. The use of the term 'course and scope' of employment does not appear in the DA 1993, and one must be wary of introducing it as the basis on which to determine whether the work was executed for the employer under (b).

⁴⁵² Du Plessis E 'Employers' rights to intellectual property' Report Q183 South Africa Group for AIPPI 2004 [1.2.3] available at <http://aippi.org/event/39th-world-intellectual-property-congress/> (date of use 30 November 2015)

The third manifestation of 'proprietor' provides that 'where a person, or his employee acting in the course of his employment, makes a design for another person in terms of an agreement', that other person will be the proprietor. The first point to note is the removal of the term 'author'. Instead it refers to a 'person' or such person's 'employee acting in the course of his employment' who *makes* a design for another person. This provision contemplates the situation where a design is commissioned from a person – including a juristic person – who employs other persons. The proprietor of the design is the person for whom the design was made in terms of the agreement. Where the author of the design is the party who has agreed to make the design, he or she will therefore not be entitled to apply for registration. Where the agreement to produce the design is concluded between an employer and a third party, and the design is made by an employee, the third party would be the proprietor – provided that the employee made the design 'in the course of his employment'.

None of the key terms, for example, 'makes', 'employee' and 'course of employment', is defined in the DA 1993, and there do not appear to be any reported cases on their meaning in this context. A further question is whether the term 'makes' in fact refers to authorship. In other words, can we deduce from this subsection that the definition of 'author' is the person who 'made' the design? If so, it would seem that the reference to the 'person' possibly employing someone, anticipates a juristic person as author, as canvassed in the consideration of (a) above.

The phrase 'course of employment' is found in the CA 1978. In the context of section 21(1)(d) of the CA 1978, the *King* case interpreted the phrase in a relatively expansive way and found that even though writing computer programmes was not part of the author's duties as employee, the works had nevertheless been made in the course of his employment. However, it cannot be assumed that a similar interpretation would apply in the present context, particularly when one considers that the court pointed out that not only was it not laying down any principles on the matter, but also that the underlying copyright policies affected the suitability of looking to other areas of law for guidance in interpretation. The theoretical

underpinnings of industrial design rights arguably differ from those of copyright, and indeed the protection offered is more in line with patents.

If, however, it is accepted that the employee made the design in the course of his or her employment, the proprietorship vests in the commissioner by virtue of an agreement with the employer. The overall effect of the provision is limited to those cases where the design has been made pursuant to an agreement between the employer and a third party. It does not deal with the issue of entitlement between the employer and employee generally, and is therefore not authority for a statutory default rule of employer proprietorship in all cases where the employee has made a design in his or her 'course of employment'. However, the question is whether one could extrapolate that 'made in the course of employment' implies that this is the default.

The fourth basis for proprietorship is subsection (d) which provides that 'where the ownership in the design has passed to any other person' that person is the proprietor. It is assumed that this refers to where the person who would have been the proprietor under any of the preceding provisions, has entered into an agreement in terms of which the rights have been transferred. It is submitted this would also apply where the right has devolved by operation of law under section 29 of the DA 1993. Therefore, for an employer to claim proprietorship of an employee-authored design under this provision, it must show that the ownership has passed to it from the employee-author, most likely by assignment or by implication under the common law. In turn, this raises issues similar to those arising under the PA 1978.

The two key considerations are: whether the ownership in the design passed to the employer in terms of an agreement; and in the absence of this, whether there is an implied common-law rule vesting ownership of registrable industrial designs in the employer. Neither of these issues will be considered further as they raise substantially the same concerns as those addressed in Chapter 3 in relation to patents. This is supported by Pistorius and van der Merwe who note that '[s]ince the rights and obligations that exist between employees and employers are a matter of contract law, they are essentially the same as those that apply in relation to patent

law'.⁴⁵³ This reflects the view that in the absence of an agreement between the parties, the legislation does not provide for a first-ownership rule in favour of the employer.

4.4.3 The Role of Contract in the Allocation of Ownership

References to the use of contract or agreements in the preceding discussion of proprietorship must take into account the provisions of section 29(2) that

'[a]ny condition on a contract of employment which-

(a) requires an employee to assign to his employer a design made by him otherwise than within the course of his employment; or

(b) restricts the right of an employee in a design made by him more than one year after the termination of the contract of employment,

shall be null and void'.⁴⁵⁴

This provision is virtually identical to section 59(2) of the PA 1978. The issues raised by the restrictions in that context, arise here too. However, an added difficulty in understanding the scope of section 29(2) of the DA 1993 arises from the fact that registered designs appear to be aligned with both patents and copyright. Although section 29(2) echoes the PA 1978 for the most part, the phrase 'course and scope' is replaced with 'course of employment' – a phrase found in the CA 1978.⁴⁵⁵ The concerns in interpreting 'course of employment' in the copyright context, and specifically as regards to its effect on the employer's reach, apply here as well.

⁴⁵³ Pistorius & van der Merwe (n433) 256.

⁴⁵⁴ Section 29(2).

⁴⁵⁵ See further Tong (n380).

4.5 PLANT BREEDERS' RIGHTS ('PBRs')

4.5.1 The Relationship between PBRs and Patents

PBRs give the breeders of new plant varieties exclusive control over the commercialisation of propagating and harvested material of the newly-bred variety. The TRIPS Agreement, while requiring that members provide patent protection for inventions 'in all fields of technology',⁴⁵⁶ also allows members to exclude plants from patentability.⁴⁵⁷ However, plant varieties must nonetheless be protected 'either by patents or by an effective *sui generis* system or by any combination thereof'.⁴⁵⁸ PBRs are a form of protection implemented in many countries, usually under obligations arising from membership of the International Union for the Protection of New Plant Varieties ('UPOV').⁴⁵⁹

In South Africa, plant varieties and essentially biological processes for the production of plants, are excluded from patentability by the PA 1978.⁴⁶⁰ This was not always the case, however. Under the PA 1952 plant varieties were originally explicitly recognised in the definition of 'invention', which included 'any distinct and new variety of plant, other than a tuberpropagated plant which has been produced asexually'.⁴⁶¹ In 1960 the Act was amended to limit patenting to ornamental trees and shrubs. However, all plant patents were removed when the Plant Breeders' Rights Act 22 of 1964 ('PBRA 1964') introduced registration for PBRs. Currently, plant varieties are protected as *sui generis* PBRs under the PBRA 1976.⁴⁶² The

⁴⁵⁶ Article 27(1).

⁴⁵⁷ TRIPS art27(3)(b). The exclusion is limited to plants other than micro-organisms, and essentially biological processes for the production of plants other than non-biological and microbiological processes.

⁴⁵⁸ Ibid.

⁴⁵⁹ See www.upov.int; further de Jonge B 'Plant variety protection in sub-Saharan Africa: Balancing commercial and smallholder farmers' interests' (2014) 3 *Journal of Politics and Law* 100.

⁴⁶⁰ PA 1978 s25(4).

⁴⁶¹ S 1; *Weltevrede Nursery v Keith Kirsten's (Pty) Ltd and another* 2004 (4) SA 110 (SCA) 115; see further Burrell (n435) 33.

⁴⁶² Commenced 1 November 1977; must be read with the Plant Breeders' Rights Regulations (GN R1186 GG 18266 of 12 September 1997) ('PBRA Regs').

PBRA 1976 also gives effect to South Africa's obligations as a member of UPOV and as a party to the 1978 Act of the UPOV Convention of 1961.

Under the PBRA 1976, applicants may apply to register a PBR in respect of plant varieties recognised in the regulations to the Act.⁴⁶³ The variety must meet the intrinsic requirements of newness,⁴⁶⁴ distinctiveness,⁴⁶⁵ uniformity,⁴⁶⁶ and stability.⁴⁶⁷ Newness here differs from that in patent and design legislation in that it does not relate to absolute novelty but rather to whether the variety has been commercialised.⁴⁶⁸

A PBR entitles the holder to prevent others from performing certain acts in relation to propagating material or to certain harvested material, without a licence.⁴⁶⁹ The acts are production or reproduction, conditioning for the purpose of propagation, sale or marketing, exporting, importing, or stocking for the purposes of these acts.⁴⁷⁰ It is an infringement to use the denomination of a protected variety in relation to other plants or propagating material, or to sell protected plants or propagating material under any name other than the approved denomination.⁴⁷¹ The duration of the right is 25 years for vines and trees, and twenty years in all other cases.⁴⁷² PBRS may be assigned.

⁴⁶³ PBRA Regs reg 2.

⁴⁶⁴ PBRA 1976 s2(2)(a).

⁴⁶⁵ Id s2(2)(b). See *Peppadew International v OMC Marketing* 2006 BIP 398 (TRPBR) para [10.1]; *Weltevrede Nursery* (n461) 122; van der Spuy P 'Part 6 Plant Breeders' Rights' in van der Merwe *A ed Law of Intellectual Property in South Africa* (2011) 344-345.

⁴⁶⁶ PBRA 1976 s2(2)(c).

⁴⁶⁷ PBRA 1976 s2(2)(d). See also *Peppadew* (n465) para [10.1]; *Piquante Brands International (Pty) Ltd v OMC Marketing (Pty) Ltd and Another* 2007 BIP 453 (RPBR) 459. For more on the intrinsic requirements generally, see Cochrane D 'Chapter 6 Plant Breeders' rights' in Dean & Dyer (n446) 286-7.

⁴⁶⁸ PBRA 1976 s2(2). See van der Spuy (n465) 344; see *Weltevrede Nursery* (n461) 120-3 for the position prior to the 1996 amendment Act.

⁴⁶⁹ PBRA 1976 s23(1); see also s23(2) and s23(4). There are, however, limitations to the exclusivity afforded by the legislation. See PBRA 1976 s23(6); Cochrane (n467) 291-2.

⁴⁷⁰ PBRA 1976 s23(1); s23A(a).

⁴⁷¹ PBRA s23A(c), (d).

⁴⁷² PBRA s21.

There is no clear attribution right although the ‘breeder’ is recorded in the register.⁴⁷³

4.5.2 Entitlement to PBRs in the Employment Context

The PBRA 1976 does not explicitly provide for ownership of PBRs but does so in practice by limiting applications to ‘the breeder’.⁴⁷⁴ This functions as a first-ownership rule as the person to whom the application has been granted will be the holder of the right.⁴⁷⁵ Natural and juristic persons are expressly recognised as potential applicants.⁴⁷⁶ Unfortunately, to date there do not appear to be any reported decisions dealing in any substance with the interpretation of the definition. Given the paucity of case law on PBRs generally, this is not surprising.⁴⁷⁷

A ‘breeder’ is

‘(a) the person who bred, or discovered and developed, the variety; (b) the employer of the person referred to in paragraph (a), if that person is an employee whose duties are such that the variety was bred, or discovered and developed, in the performance of such duties; or (c) the successor in title of the person referred to in paragraph (a) or the employer in paragraph (b)’.⁴⁷⁸

With regard to subsection (a), the terms ‘bred’ and ‘discovered and developed’⁴⁷⁹ are not defined.⁴⁸⁰ According to van der Spuy, ‘[i]f one person discovered the variety and another developed it, both should be entitled to apply for a plant breeder’s right’.⁴⁸¹

⁴⁷³ PBRA 1976 s4; PBRA Regs reg 20(1)(d).

⁴⁷⁴ Section 6(1).

⁴⁷⁵ PBRA 1976 s1 definition ‘holder’.

⁴⁷⁶ PBRA 1976 s6(2), s1 definition of ‘agreement country’, ‘convention country’, and ‘breeder’.

⁴⁷⁷ See Koster, B ‘Plant Breeders’ Rights Act gets teeth. Decision of special appeal board – first of its kind’ (1997) April *De Rebus* 258; *Weltevrede Nursery* (n461) 119 in which it was assumed that the alleged discoverer did so as an employee of the appellant.

⁴⁷⁸ Section 1 definition of ‘breeder’.

⁴⁷⁹ The pre-amendment legislation provided for discovered *or* developed.

⁴⁸⁰ For the meaning ‘discovered’ and ‘developed’ see *Weltevrede Nursery* (n461) 119-20. See further Cochrane (n467) 285-6.

⁴⁸¹ Van der Spuy (n465) 235.

They would then hold the right jointly in equal undivided shares.⁴⁸² Where an employee meets the definition in (a), he or she will be the breeder and entitled to the registration.

However, if the employee acts in the circumstances set out in (b), he or she will no longer satisfy the definition. The employer is deemed to be the 'breeder' and is entitled to apply for the rights under section 6. To determine whether this deviation from the rule in (a) applies, one must determine whether the person who would have been the breeder under (a), is an employee of the employer. The PBRA 1976 provides no guidance. It is likely that a court would regard it as a reference to an employment relationship in the nature of the common law *locatio conductio operarum*.

Once it has been established that the appropriate relationship exists, the next issue is whether the employee is one 'whose duties [were] such that the variety was bred, or discovered and developed, in the performance of such duties'.⁴⁸³ The use of terms like 'duties', 'are such' and 'in the performance of such duties', indicate that the employee must have been involved in carrying out work he or she was employed to do. However, it does not state that the employee must have been employed specifically to breed, develop, or discover new varieties, and it may consequently be possible to interpret the provisions to extend the employer's reach to situations where the employee was not specifically employed to generate new plant varieties. It is unclear exactly what this would mean for the potential scope of the employer's claim. It is noteworthy that the Act does not base the employer's claim on more common phrasing like 'course' or 'course and scope' of employment.

An employee who breeds, or discovers and develops a plant variety outside of these circumstances is the breeder and is entitled to apply for the registration.

The third iteration of the definition of 'breeder' provides that the successor in title of the person who bred, or discovered and developed the variety, or of the employer, is

⁴⁸² PBRA s28(1)(a).

⁴⁸³ Section 1 definition of 'breeder'.

the breeder. Where an employee qualifies as a person under (a), his or her successor in title is the breeder. The issue arising here is whether the employer can be the employee's successor in title, in which case it would be the breeder under (c). This would likely turn on whether there is an agreement in terms of which the employee has transferred his or her rights in the application to the employer under the employment contract. There are no statutory prohibitions on such assignments forming part of the employment agreement.

This definition of 'breeder' and the approach to first ownership were introduced into the PBRA 1976 by the Plant Breeders' Amendment Act 15 of 1996. The original definition in the PBRA 1976 was simply that a breeder was 'the person who directed the breeding of the new variety, or who developed or discovered it'.⁴⁸⁴ In order to be a breeder only one of the characteristics was required. The PBRA 1976 originally provided that an application could be made by the breeder '[p]rovided that where the breeder is an employee and his duties are such that they involve plant breeding activities related to the plant in question, the application shall be made by the employer of the breeder, irrespective of whether or not such breeder is paid a salary'.⁴⁸⁵

The Plant Breeders' Rights Amendment Act 5 of 1980⁴⁸⁶ introduced three bases on which to apply: as breeder; as employer; and as successor in title. As regards employee, the redrafted provision read that '(b) if the breeder is an employee (irrespective of whether or not he is paid a salary) whose duties are such that they involve plant breeders' activities relating to the kind of plant in question, and the new variety in question was bred in the performance of such duties, the employer of such breeder' could apply for the right.⁴⁸⁷ This position remained until the commencement of the Plant Breeders' Rights Amendment Act 15 of 1996⁴⁸⁸ which amended the

⁴⁸⁴ PBRA 1976 Notice 473 GG 5027 of 24 March 1976 s1 definition of 'breeder'.

⁴⁸⁵ Id s6(1).

⁴⁸⁶ Plant Breeders' Rights Amendment Act 5 of 1980 GG 6908 of 28 March 1980, in effect from 2 January 1981 ('PBR Amendment').

⁴⁸⁷ Id s4.

⁴⁸⁸ Plant Breeders' Rights Amendment Act 15 of 1996 GG 17138 of 19 April 1996.

definition of ‘breeder’⁴⁸⁹ and the provisions relating to who may apply for registration to their current form.

It is evident that there has been a shift towards facilitating employer-ownership of plant varieties from the outset. Previously, the employer could apply only if the employee’s duties involved plant breeding activities related to the plant in question. However, the employee remained the breeder. The current provision is less specific as to the limitations on the employer’s reach to varieties which are produced by employees who are not specifically employed to breed the variety in question. More importantly, it removes the employee from the process entirely by deeming the employer the breeder.

4.6 OBSERVATIONS ON COPYRIGHT, DESIGNS AND PLANT BREEDERS’ RIGHTS

Although patents, copyright, registered designs, and plant breeders’ rights vary in both nature and scope, each plays a role in the development of knowledge goods. Where the intellectual property rights arise from a common or related process, this variation affects the possibility of consistency in ownership across the rights. In the employment context, this results in the employer who has contributed to the development of the subject matter, being in different first-ownership positions depending on the underlying right. The following observations sum up the main observations which will inform the conclusions in Chapter 6.

Firstly, in each case, corporate title is made possible where employees have effectively made the work, design, or plant variety. This is in obvious contrast to the approach to patent ownership. However, despite a common acknowledgement that a deviation from the default position in favour of the individual is necessary, there is no consistency in the substance or form. The PBRA 1976 achieves this through a ‘breedership’ rule which defines the ‘breeder’ in a way that results in the employer displacing the employee as the breeder where the latter has acted in the performance of his or her duties. This is arguably appropriate if plant breeding simply

⁴⁸⁹ Id s1(b).

involves the employee carrying out the employer's instructions – particularly if the level of discretion to deviate from the required output (variety) is limited.

The CA 1978 has a broad first-ownership rule extending to all works made in the 'course of employment'. Again, this may be appropriate if one considers the nature of the protectable works. In many situations, employees will generate works which attract copyright as part of performing their general duties. These will include administrative works, such as memoranda and reports, many of which are generated alongside patentable invention and often regardless of what the employee is actually employed to do.

The DA 1993 also appears to align with a default position which deviates from vesting ownership in the employee even though he or she is the author. However, the Act is not explicit in creating a first-ownership rule in favour of the employer, although it may be interpreted in this way. Reference is made to employment but, as with the other statutes, there is no explanation of what is intended.

Although the employee's loss of first ownership is a consequence of his or her status as an 'employee', which is, in turn, dependent on the relationship between the corporate and him or her, none of the statutes explains the nature of the relationship to which the rule applies. This is even though terms like 'employer', 'employee', 'contract of service' and 'employment' to limit the application of the rule. It is only in the copyright context that the courts have been called upon to consider the nature of the relationship and have turned to the common law to substantiate a meaning in the guise of a *locatio conductio operarum*.

A second observation relates to the use of contract to regulate title. Neither the PBRA 1976 nor the CA 1978 overtly limits the employer's right to contract with the employee for assignment of rights to intellectual property made outside of this default position. However, the DA 1993 is clear in its rule limiting an employer's reach to designs not made in the course of employment. In this respect it aligns, almost identically, with the PA 1978 save for the use of 'course' in instead of 'course and scope'. A key difference however, is that the DA 1993 does appear to create the

possibility of an *ex lege* employer-ownership in the definition of 'proprietor', in which case.

Thirdly, only copyright provides expressly for attribution of the individual where he or she has relinquished ownership. However, where the employer is the default copyright owner, the existence of the right to be named as the author is uncertain. Neither designs nor PBRs expressly provide for any form of analogous moral rights. Indeed, the PBR 1976 provides for the breeder to be named in the registration – a question of fact dependent on who meets the definition, and the effect of which is that the employee may not be associated with the plant variety at all.

Fourthly, in all cases where the legislation divests an employee of rights which he or she would have acquired were it not for the employment relationship, the employee is left with nothing. There are no residual economic rights entitling the employee-creator to any form of compensation or other reward where the employer acquires ownership. It is left to the contract between the employer and employee to determine the nature and value of the employee's return for the work, design, or plant variety created.

Finally, save for PBRs, there is general uncertainty about the application of certain ownership-related provisions to juristic persons, and by implication, to employers. However, generally involvement of the employer in the generation of intellectual property in these areas is recognised in the allocation provisions. In limited instances the recognition is through a complete removal of the employee from the ownership chain by not recognising him or her as the contributor of the intellectual effort him or her. In others, the role is recognised but not associated with vesting of ownership. In Furthermore, there are no alternatives to this either-or position.

CHAPTER 5

ENTITLEMENT TO PATENTABLE INVENTIONS: CONSIDERATIONS FROM THE UNITED KINGDOM AND THE UNITED STATES OF AMERICA

5.1 INTRODUCTION

National responses to the challenges of balancing employer and employee interests in the ownership of inventions vary, with some jurisdictions choosing to deviate from the archetypal patent law approach. However, there is no singular deviation common to all. This chapter examines the responses of the British and American systems to the challenges of the employee-invention paradigm identified in Chapter 2. This will provide insight into the potential strengths and weakness of two divergent regulatory approaches which have been adopted by technologically innovative countries.

Although both offer deviations from the archetypal patent law recognition of the inventor as the first owner, Britain does so by statute, while the USA relies predominantly on the common law. The decision by the former to embark on a drastic overhaul of its system, and by the latter to rely on the development of the common law, are the result of domestic drivers which are not the same as those in South Africa. Consequently, the aim here is not to determine whether either system ought to be transplanted wholly into South Africa, but rather to identify those aspects which could serve to contribute to the answer to the question: How ought South Africa to take account of the employee-invention paradigm in the allocation of rights in patents?

5.2 THE UNITED KINGDOM

5.2.1 Introduction

In Britain entitlement to patents for employee-inventions is regulated primarily by sections 39 to 43 of the Patents Act of 1977 ('BPA 1977')¹ which provide for the allocation of ownership and for the payment of compensation by employers to employee-inventors. Before the enactment of the BPA 1977, entitlement to employee-inventions was governed by the common law. In the run up to the BPA 1977 the Board of Trade was tasked with reviewing the British laws in anticipation of the UK's ratification of the European Patent Convention ('EPC').² The Banks Committee, which was responsible for the review, proposed no changes to the existing legal position, noting in its report that '[w]hile employee inventors should be given every encouragement and recognition, we doubt whether, in the context of British industrial relations, this is best done by the imposition of statutory obligations on the employer'.³ The government's response to the report, however, included a proposal for statutory compensation for employee-inventions if it could be shown that 'employee inventors were being unfairly rewarded under voluntary arrangements with their employers'.⁴ According to Hough & Spowart-Taylor, one of the reasons for the shift from the common law to a statutory allocation rule and the introduction of compensation for employees, was a concern 'that the national economic interest could be served by stimulating innovation and that this project could be realized more effectively if inventors received a more just distribution of the economic benefit

¹ For the historical development of the British provisions on employee-inventions, see Saxby P 'Employees' inventions and English law' in Phillips J (ed) *Employees' Inventions: A Comparative Study* (1981) 108; Phillips J 'The English patent as a reward for invention' (1983) *EIPR* 41ff; Pila J "'Sewing the fly buttons on the statute": Employee Inventions and the employment context' (2012) 32 *Oxford Journal of Legal Studies* 265; Hough B & Spowart-Taylor A 'Realising "Partnership" in employment relations: Some legal obstacles' (2002) 13 *KCLJ* 158-64.

² Board of Trade 'The British Patent system: Report of the Committee to examine the patent system and patent law' (Cmnd 4407) 1970 ('Banks Committee'). For more on the historical background to the report, see Pila (n1) 286-90; Phillips 1983 (n1) 32-3.

³ Chapter 16.

⁴ White Paper 'Patent Law Reform' Cmnd 6000 1975 para [37].

which employers derive from their inventions'.⁵ The resultant provisions have been described as a compromise aimed at rewarding exceptional cases only.⁶

Interestingly, although a key reason for the enactment of the BPA 1977 was to bring the UK in line with the EPC,⁷ the complexity of the statutory provisions stand in contrast to the EPC's relatively non-committal approach to the issue.⁸

5.2.2 Patentable Inventions Made in the Employment Context

5.2.2.1 Basis for ownership and attribution

The British patent system operates on a first-to-file basis so that generally the first person to file an application for the patent is entitled to the patent.⁹ The BPA 1977 provides that '[a]ny person may make an application for a patent either alone or jointly with another'¹⁰ subject to a rebuttable presumption that the person making the application is entitled to the patent.¹¹ Therefore, who may file is integral to first ownership in the invention. While there is no limitation on who may apply for a patent,¹² only recognised persons may be granted the patent. Section 7(2)(a) provides that an invention will be granted 'primarily to the inventor or joint inventors'.¹³

⁵ Hough & Spowart-Taylor (n1) 159, see generally 158-64.

⁶ Wotherspoon K 'Employee inventions revisited' (1993) 22 *Industrial Law Journal* 119-20.

⁷ See Cornish W, Llewelyn D & Aplin T *Intellectual Property: Patents, Copyright, Trade Marks and Allied Rights* 8ed (2013) 119-21. For more on the historical development of the PA 1977 generally, see Michaels P 'The British Patents Act of 1977' (1979) 13 *International Lawyer* 667.

⁸ For more on the relationship between the BPA 1977 and the EPC, as well as the EU unitary patent (which is not yet in effect), see Cornish et al (n7) 151-6.

⁹ See further Monotti A & Ricketson S *Universities and Intellectual Property Ownership and Exploitation* (2003) 145.

¹⁰ Section 7(1).

¹¹ Section 7(4). See also Bainbridge D *Intellectual Property* 9ed (2012) 496; Cornish et al (n7) 158.

¹² See Hart T, Fazzani L & Clark S *Intellectual Property Law* 4ed (2006) 40; Phillips J & Firth A *Introduction to Intellectual Property Law* 2ed (1990) 55.

¹³ Section 7(2)(a). For the effects of joint inventorship on ownership see BPA 1977 s36(2)(a) and further Marchese D 'Joint ownership of intellectual property' (1999) 21(7) *EIPR* 365-6.

Non-inventor applicants may be first patentees, provided they fall into one of two categories provided in the BPA 1977. The first is ‘persons who, by virtue of any enactment or rule of law, or any foreign law or treaty or international convention, or by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention ... were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in the United Kingdom’.¹⁴ The second category consists of the successors in title.¹⁵ Non-inventor applicants must file a statement ‘identifying the person or persons whom he believes to be the inventor or inventors’¹⁶ and ‘the derivation of his or their right to be granted the patent’.¹⁷ The provisions of section 7(2) are the sole determinants of entitlement to a patent and are regarded as comprising an ‘exhaustive code’ in this respect.¹⁸

Irrespective of who is entitled to apply for the patent, the BPA 1977, like its predecessor, recognises the right of the inventor to be named. Under section 16 of the Patents Act of 1949, a person could request that he or she be named as the inventor in the patent. For this purpose ‘the actual devisor of an invention or part of an invention’ was deemed to be the inventor.¹⁹ The current legislation provides that the ‘inventor or joint inventors of an invention shall have the right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned if possible in any published application for a patent for the invention and,

¹⁴ Section 7(2)(b).

¹⁵ Section 7(2)(c).

¹⁶ Section 13(2)(a).

¹⁷ Section 13(2)(b). A failure to do so will render the application withdrawn, s13(2).

¹⁸ Section s7(2) ends with the phrase ‘and to no other person’, indicating that this is a closed list. See Cornish et al (n7) 282. See *Yeda Research & Development Co Ltd v Rhone-Poulec Rorer International Holdings Inc* [2008] RPC 1 10-11. This case overruled the approach adopted by the Court of Appeal in *Markem Corp v Zipher Ltd* [2005] RPC 31 (CA) in which it was held that for an entitlement enquiry under s8(1), a breach of an independent rule is necessary. See further Carter A & Ayrton S ‘Is making the invention not enough? Analysis of the Court of Appeal’s approach to entitlement in *Markem v Zipher*’ (2006) 28(10) *EIPR* 51; Briggs N ‘Entitlement’ (2006) 28 (12) *EIPR* 611; Hart et al (n12) 41; Moore S & Meale D ‘Patents – Patent ownership’ (2008) 30 *EIPR* 30ff; Torremans P *Intellectual Property Law* 5ed (2008) 94-5; Bainbridge (n11) 495-7.

¹⁹ BPA 1949 s16(2). See further Monotti & Ricketson (n9) 144 n15.

if not so mentioned, a right to be so mentioned in accordance with rules in a prescribed document'.²⁰ The inventor may, however, waive his or her right to be named but would have to provide reasons to the Comptroller in support of this request.²¹ This express recognition of the 'moral right of the inventor' was introduced in 1938 as a legally enforceable right.²²

The general provisions above also apply to the employment situation and are discussed next.

5.2.2.2 Allocation of ownership of employee-inventions under the British Patents Act 1977

5.2.2.2.1 General

In so far as entitlement to apply for the patent is concerned, the general situation would also apply to inventions made by employee-inventors. Where the employee is the inventor, he or she is entitled to the patent, unless the employer has a better title. For the employer to qualify as a grantee, it must be an inventor or show that it meets the requirements of section 7(2)(b) as a non-inventor applicant. In respect of the latter option, the employer must show it acquired the title through a rule of law. In this case the provisions of the BPA 1977 relating to employee-inventions apply. The alternative is for the employer to prove that an agreement was entered into with the inventor before the invention was made.²³ The effect of these three bases for first ownership: inventorship; the rule in section 39 of the BPA 1977;²⁴ and contract on the recognition of employers and employees as grantees of the patent, are considered next.

5.2.2.2.2 Entitlement through inventorship

Section 7(2)(a) provides that a patent may be granted 'primarily to the inventor or joint inventors'. A claim to entitlement by the employer or the employee depends on

²⁰ BPA 1977 s13(1).

²¹ *Id* s24(2). See further Bainbridge (n11) 495.

²² See Meinhardt P *Inventions, Patents and Monopoly* (1946) 16.

²³ BPA 1977 s7(2).

²⁴ See p 193 below.

which of the two qualifies as an inventor under the Act. Section 130(1) provides that the term ‘inventor’, ‘has the meaning assigned to it by section 7 above’. Section 7(3), in turn, provides that for the purposes of the Act, the “inventor” in relation to an invention means the actual devisor of the invention[...].²⁵ There are no provisions to assist in the interpretation of ‘actual devisor’.²⁶ Although it has been observed that ‘[f]ortunately, it is getting on for a century since there was any serious litigation as to the legal definition of an inventor, so the problem is not likely to ruffle overmuch the anxious wig’,²⁷ the question arises as to how this definition aligns with the international patent system, and particularly whether as a juristic person, the employer can claim ownership on this basis.

The determination of inventorship depends on knowing what constitutes the invention.²⁸ The BPA 1977 provides that

‘[f]or the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent’.²⁹

For the purposes of entitlement claims under the BPA 1977, one need not prove that the invention is patentable³⁰ as the determination of inventorship for entitlement purposes is independent of a subsequent claim that a granted patent is invalid.³¹ The elements of the claim to which the person must have contributed have been described in various ways: in *Henry Brothers (Magherafelt) Ltd v Ministry of Defence*

²⁵ Section 7(3). On joint inventorship see further Marchese (n13) 365; *Staeng Ltd's Patents* [1996] RPC 183 (PO) 188-90.

²⁶ See Phillips & Firth (n12) 57. See further *Norris Patent* [1988] RPC 159; Chandler A ‘Ownership of employees’ inventions: Duties, expectations and variable objectivity’ (2008) *EIPR* 164.

²⁷ Phillips & Firth (n12) 57.

²⁸ See, for example, *University of Southampton's Applications* [2006] RPC 21; *Yeda* (n18) 10; and further Bailey A ‘Patents – Inventorship – Ownership’ (2001) 23 *EIPR* 181; see also Bainbridge (n11) 496-8.

²⁹ Section 125(1). See *Stanelco Fibre Optics Ltd's Applications* [2005] RPC 15 326.

³⁰ See Monotti & Ricketson (n9) 146.

³¹ See *Viziball Ltd's Application* [RPC] 213 PatC; Monotti & Ricketson (n9) 147.

and Northern Ireland Office, it is the 'inventive concept';³² while Monotti and Ricketson speak of 'the essential elements of the invention disclosed in the patent application'.³³ For Cornish et al it is the 'inventive step – the “heart” of what is disclosed' that must be determined.³⁴

The next step is to determine what it means to devise the invention.³⁵ In *Markem Corporation v Zipher Ltd (No1)* the court stated that the word 'devise' had a slightly broader meaning than 'make' or 'implement',³⁶ and suggested the planning of a particular course of action even before that course of action is actually implemented. The difficulty in interpreting the term is compounded by the reference to 'actual'. For Phillips and Firth this opens it 'to speculation as to whether there is a subtle but significant difference between a devisor and an actual devisor'.³⁷ It is arguable that the reference to 'actual' is not an indication that juristic persons are excluded, but rather a means of distinguishing the nature of the contribution necessary for inventorship from legal definitions which are deemed. In *Stanelco Fibre Optics Ltd's Applications* – which dealt with a dispute over the inventorship of patents related to the manufacture of capsules used in the medical field – Floyd J noted that the term 'seems to have been carried forward from s.16(2) of the 1949 Act, which uses the term to distinguish between the persons who are actually responsible for making the invention and a mere importer [sic]'.³⁸

This ambivalent approach was evident before the BPA 1949. Wadlow notes in his discussion of the attempt at the turn of the twentieth century to introduce a British Empire patent law to harmonise the laws in all the British colonies, that '[e]ven before the Statute of Monopolies, and ever since, English law had adopted an ambivalent

³² [1999] RPC 442 CA 448. See Hull J 'Ownership of rights created in sponsored academic collaborations - a note on the *Ida*, *Statoil* and *Cyprotex* decisions' (2007) 29 *EIPR* 6 8-9.

³³ Monotti & Ricketson (n9) 146.

³⁴ Cornish et al (n7) 282.

³⁵ See Cornish et al (n7) 282.

³⁶ [2004] RPC 10. See further on this case Hull (n32) 9-11. See also Cornish et al (n77) 283 on the effect of *Yeda Research* (n18) on the later Court of Appeal decision in *Markem Corporation v Zipher Ltd* (n18) related to the requirement of an independent obligation for inventorship.

³⁷ Phillips & Firth (n12) 56.

³⁸ *Stanelco Fibre* (n29) 326.

definition of “inventor” which embraced both the actual devisor of a new invention in the intellectual sense, and the first person to introduce it (e.g. by applying for a patent on it) in a territory in which it was previously unknown, even if the latter “inventor” had simply copied it from abroad’.³⁹ The court in *Yeda Research & Development Co Ltd v Rhone-Poulec Rorer International Holdings Inc* following the approach in *University of Southampton’s Applications* that ‘[t]he word “actual” denotes a contrast with a deemed or pretended devisor of the invention’ accepted that it is a reference to ‘the natural person who “came up with the inventive concept”’.⁴⁰

According to Bainbridge, to determine who the inventor is, one must ‘identify who in substance was responsible for the invention’.⁴¹ It is submitted that ultimately the inventor is the person who contributes, in a way that is not merely mechanical, to the inventiveness that is recognised by the granting of the patent.⁴² Furthermore, it is likely that only natural persons qualify as inventors.

These issues apply equally to the determination of whether an employee is an inventor for the purposes of sections 39 to 42 of the BPA 1977. The Act provides as regards employee-inventions,

‘references to the making of an invention by an employee are references to his making it alone or jointly with another person, but do not include references to his merely contributing advice or other assistance in the making of an invention by another employee’.⁴³

It would appear, then, that the making of an invention in this context is akin to the requirement of inventorship in order to be granted a patent. Therefore, it is submitted that an employer will not qualify as a grantee of the patent on the basis of

³⁹ Wadlow C ‘The British Empire patent 1901-1923: The “Global” patent that never was’ (2006) 4 *IPQ* 315.

⁴⁰ *Yeda Research* (n18) 10. See also *IDA Ltd v University of Southampton* [2006] RPC 567. See further discussion (British) Intellectual Property Law Office ‘Manual of Patent Practice’ (2013) (MoPP) [7.12].

⁴¹ Bainbridge (n11) 451.

⁴² See further Marchese (n13) 365 and the reference there to *Smith’s Patent* (1905) 22 RPC 57.

⁴³ Section 43(3).

inventorship given the association of inventorship with the intellectual input of a natural person which is required to 'devise' the inventive concept.

5.2.2.2.3 *Entitlement through an enactment or a rule of law*

(a) Section 39(1) of the BPA 1977 and the common law

Section 7(2)(b) provides that the inventor will not be granted the patent where 'any person or persons, who by virtue of any enactment or rule of law ... was or were at the time of the invention entitled to the whole of the property in it'. The provisions of section 39(1) serve as a statutory basis for the employer to claim ownership under section 7(2)(b).⁴⁴ Where section 39(1) does not apply, the employee will own the invention as between the employee and employer,⁴⁵ and will be entitled to apply for a patent and to work the invention without hindrance from the employer.⁴⁶

Section 39 provides as follows:

- (1) Notwithstanding anything in any rule of law, an invention made by an employee shall, as between him and his employer, be taken to belong to his employer for the purposes of this Act and all other purposes if -
 - (a) it was made in the course of the normal duties of the employee or in the course of duties falling outside his normal duties, but specifically assigned to him, and the circumstances in either case were such that an invention might reasonably be expected to result from the carrying out of his duties; or
 - (b) the invention was made in the course of the duties of the employee and, at the time of making the invention, because of the nature of his duties and the particular responsibilities arising from the nature of his duties he had a special obligation to further the interests of the employer's undertaking.

⁴⁴ For further general discussion on s39(1) see Bainbridge (n11) 478-9; Hart et al (n10) 41-4.

⁴⁵ Section 39(2). See further Jaworski A 'Legislative incentives for inventive employees' (2006) 13 *eLaw Journal* 129; Chandler A 'Employees' inventions: Inventorship and ownership' (1997) 19(5) *EIPR* 262; Stallberg C 'The legal status of academic employees' inventions in Britain and Germany and its consequences for R&D agreements' (2007) 4 *IPQ* 500.

⁴⁶ See BPA 1977 s39(3). For further discussion see Hodgkinson K *Employee Inventions and Designs Law and Practical Management* (1986) 32.

The scope of the application is determined firstly by the definition of 'invention'. Since the only definition of invention in the BPA 1977 relates to patentable inventions,⁴⁷ in the absence of a similar limitation in section 39(1) there is opinion that the provisions are 'intended to govern ownership of all inventions, whether patentable or not'.⁴⁸ This discussion is, however, limited to patentable inventions.⁴⁹

The provisions apply to employees. An 'employee' is defined in the Act as:

'a person who works or (where the employment has ceased) worked under a contract of employment or in employment under or for the purposes of a government department or a person who serves (or served) in the naval, military or air forces of the Crown'.⁵⁰

An 'employer' is defined as 'the person by whom the employee is or was employed'.⁵¹ The definition invited the criticism of Phillips who viewed it as 'the latest in a bewilderingly long line of statutory definitions of 'employee' each it seems being marginally different from the other'.⁵²

Before the BPA 1977,⁵³ the ownership in employee-inventions was regulated by the common law. Now, the common law is only relevant in so far as the ownership is not regulated by the statute⁵⁴ and would therefore be limited to certain non-patentable inventions.⁵⁵ Although the common law is regarded as having formed the basis for section 39(1),⁵⁶ the two are not interchangeable.⁵⁷ In the *LIFFE* case it was made

⁴⁷ Section 125(1).

⁴⁸ See Phillips (n52) 11; Cornish W 'Rights in university innovations: The Herschel Smith lecture for 1991' (1992) 14 (2) *EIPR* 15. For further discussion of this see Hodkinson (n46) 9.

⁴⁹ See *Liffe Administration and Management v Pavel Pinkava* [2007] RPC 30 discussed below which dealt with unpatented inventions.

⁵⁰ Section 130(1).

⁵¹ *Ibid.*

⁵² Phillips J *Employees' Inventions and the Patents Act 1977* (1978) 11. Phillips' further criticism was that the definition differed from the copyright legislation in that it excluded those employed under contracts of apprenticeship.

⁵³ Effective date 1 June 1978.

⁵⁴ See Cornish W 'Employees' Inventions' in Vitoria M (ed) *The Patents Act 1977* 79.

⁵⁵ Hodkinson (n46) 5-6.

⁵⁶ See Cornish (n48) 15; Saxby (n1) 114. Also, Pila J 'Professional and Academic Employee Inventions: Looking beyond the UK Paradigm' in Pittard M, Monotti A & Duns J *Business Innovation*

clear that the BPA 1977 ‘was not a consolidating measure. As its long title proclaims it provided for a new law relating to patents. Employees’ inventions are dealt with in ss.39 to 43’;⁵⁸ and furthermore that ‘the cases decided before the enactment of s.39 can only be guidance in relation to the assessment of an employee’s duties in the circumstances of that case. For my part I doubt if they are helpful in even that limited context’.⁵⁹ Earlier, while the court in *Harris’ Patent* did not explicitly say that pre-BPA 1977 case law was no longer authoritative, it specifically noted that the provisions of section 39 constituted the current law.⁶⁰

Under the BPA 1949, an application could generally only be made by a ‘person claiming to be the true and first inventor of the invention’ or an assignee of the first and true inventor.⁶¹ An employer could therefore not claim a patent on an employee-invention. However, employers relied on the contract between the parties to claim their employees’ intellectual output. Eventually, the courts began to recognise that employers had an interest in employees’ inventions which they had made while under a duty to do so.⁶² As a result, in certain cases where the contract was silent, it was implied that the employer would own the invention.

Although it appears that a rule was implied or imported into the contract to provide that the employer would own the employee’s patentable invention, there was ‘no “rule” that any invention made by an employee is inevitably the property of the

and the Law - Perspectives from Intellectual Property, Labour, Competition and Corporate Law (2013) 92; Michaels (n7) 675.

⁵⁷ See further Monotti & Ricketson (n9) 155-6; see Cornish (n54) 82 writing at the time that ‘the exceptions reflect the lines of the common law and it is difficult to detect any significant variation in the way the statutory rules have been formulated’.

⁵⁸ *Liffe* (n49) 685. See further (MoPP) (n40) paras [39.08-39.09].

⁵⁹ *Liffe* (n49) 690.

⁶⁰ *Harris’ Patent* [1985] RP 19 PatC 28.

⁶¹ Section 1(1).

⁶² For the development of the common-law rules relating to employee-inventions, see Neumeyer F ‘Employees’ rights in their inventions’ (1962) 44 *Journal of the Patent Office Society* 701-06. See also the detailed account in Pila (2012) (n1) 267-75; Monotti & Ricketson (n9) 161-3.

employer'.⁶³ As a common-law development, the conventional source is *Sterling Engineering Co v Patchett*⁶⁴ in which Viscount Simmonds opined that it is an implied term in the sense that 'in the contract of service of any workman that what he produces by the strength of his arm or the skill of his hand or the exercise of his inventive faculty shall become the property of the employer', and further that it would therefore be for the employer to decide whether or not it is to be patented.⁶⁵ In the same case, Lord Reid held that it is

'inherent in the legal relationship of master and servant that any product of the work the servant is paid to do belongs to the master: I can find neither principle nor authority for holding that this rule ceases to apply if a product of that work happens to be a patentable invention'.⁶⁶

Cornish notes that *Sterling Engineering*, a decision which reflected the 'age of corporate capitalism',⁶⁷ and which was 'undeniably a capitalist view of the matter',⁶⁸ the approach of the courts was on a contract in favour of the employer or on an implied duty of trust.⁶⁹ Use of the employer's resources also did not imply such a term.⁷⁰

Under the BPA 1949 the Comptroller or court could, 'unless satisfied that one or other of the parties is entitled, to the exclusion of the other, to the benefit of an invention made by the employee' order an 'apportionment between them of the benefit of the invention, and of any patent granted in respect thereof, in such manner as the court of comptroller considers just'.⁷¹ *Sterling Engineering* also has the (dubious) honour of interpreting the provision so strictly that it lost its effect as a tool

⁶³ Jaworski (n45) 126. See also *Harris' Patent* (n60) 24: 'The authorities show clearly that there is no rule that an invention made by an employee is necessarily the property of the employer'.

⁶⁴ [1955] AC 534.

⁶⁵ *Id* 544.

⁶⁶ *Id* 547.

⁶⁷ Cornish et al (n7) 283.

⁶⁸ Cornish (n54) 79.

⁶⁹ Cornish et al (n7) 284 n15.

⁷⁰ *Id* 283 n16.

⁷¹ BPA 1949 s56(2). For more on the provision see Saxby (n1) 113-4; See also Hodkinson (n46) 8, 16.

for an apportionment of benefits between employers and employees.⁷² As Phillips notes,

‘it actually strengthened the employer’s hand against the employee by supporting the contention that it was an implied term in every contract of employment that what a man produces in the course of that employment by the “exercise of his inventive faculty” becomes *ipso facto* the property of his employer, the term being implied by virtue of the relation of the parties rather than by inference from the content of each individual contract of employment’.⁷³

Although the case reflected a shift in favour of the employer, Cornish observes that the presumption is limited to those situations where ‘the employee was employed to use his skill and inventive ingenuity to solve a technical problem’ and ‘where the employee occupied a senior managerial position and so owed a general duty of fidelity to his employer’.⁷⁴ In respect of the first situation, Michaels explains that the rules ‘stipulated that the invention belonged to the employer if, and only if, the nature of the employment was such that the employee was paid to invent’.⁷⁵ In *Electrolux v Hudson*, for example, the employer claimed the employee’s invention by virtue of a broad term in the contract of employment. The court struck this clause down as an overbroad restraint of trade.⁷⁶

(b) Section 39(1)(a) of the BPA 1977

Section 39(1)(a) gives rise to two situations in which the invention will belong to the employer: first where the invention ‘was made in the course of the normal duties of

⁷² See further Cornish (n54) 80; Phillips J ‘Employee inventors and the new Patents Act’ (1978) 7 *Industrial Law Journal* 31.

⁷³ Phillips (n72) 32. At 32 Phillips notes further that it was ten years later that an attempt was made ‘to redress the effect’ of the case through a bill on employee inventions. Unfortunately, to no avail.

⁷⁴ Cornish et al (n7) 284.

⁷⁵ Michaels (n7) 675.

⁷⁶ See further Torremans (n18) 97; Hodgkinson (n46) 7-8.

the employee’;⁷⁷ and second, where the invention was made ‘in the course of duties falling outside his normal duties, but specifically assigned to him’. In both cases the the circumstances must be ‘such that an invention might reasonably be expected to result from the carrying out of his duties’.⁷⁸

The only difference between them is that in the second case the employer’s reach is extended to inventions arising outside of the employee’s normal duties, provided that those duties were specifically assigned to him or her. In either case it is necessary to identify the normal duties of the employee when the invention was made.⁷⁹ The effect of this provision on entitlement hinges on how a court interprets ‘normal duties’ and ‘specifically assigned’. A brief consideration of some of the reported cases dealing with section 39(1)(a)⁸⁰ shows the complexity and the effect of the provision.

* ***Harris’ Patent***⁸¹

Harris appealed against a decision of the Comptroller of Patents that an invention he had made belonged to his employer (‘Reiss’). Reiss’s primary business was selling Wey valves and providing after-sale service.⁸² Harris invented a slide valve for which he sought a patent and Reiss argued that the invention fell within Harris’s normal duties.⁸³ Unsurprisingly, the court identified two enquiries: first, knowing what Harris’ normal duties were at the time of the invention and whether the invention had been made while he was carrying out those duties⁸⁴ and secondly, whether an invention could reasonably have been expected to result from carrying out those duties.⁸⁵

At the time of the invention, Harris’s was employed as the manager of the Wey valve department and his main duty was the sale of Wey valves and after-sale service to

⁷⁷ Section 39(1)(a).

⁷⁸ Ibid.

⁷⁹ See *Staengs Ltd’s Patents* (n25); Hart et al (n12) 43.

⁸⁰ See also *Pila* (n56) 99.

⁸¹ Note 60.

⁸² Id 30-1.

⁸³ It was also argued that s39(1)(b), discussed below, applied.

⁸⁴ *Harris’ Patent* (n60) 29.

⁸⁵ Ibid.

clients.⁸⁶ He was not employed to design or invent valves. Reiss, in turn, had never been engaged in solving design flaws and had a more limited reporting role. As a result, Falconer J found that it ‘there was no reason why they should, and no evidence that they did, impose on Mr Harris, their employee, as part of his normal duties, an obligation they never assumed themselves’,⁸⁷ namely to provide solutions to problems relating to design flaws in the valves.

As regards the second aspect, the court rejected Reiss’ view that the reference to ‘an invention’ was intended as a reference to ‘any invention whatsoever’.⁸⁸ It found that the reference must be ‘such an invention as that made, though not necessarily the precise invention actually made and in question’.⁸⁹ Here the nature of the duties would be one factor to consider.

The approach in *Harris’ Patent* is somewhat narrow and appears to confine the employer’s claim to situations where his or her normal duties, determined by the contract and the actual performance of the job, would include inventive activity of the type in question.⁹⁰ Even if the employee is duty-bound to invent, the actual invention must be one reasonably contemplated in the performance of that duty. An invention unrelated to the employer’s business but which arose during the course of the employee carrying out normal duties, would be excluded. Therefore, the employer’s reach is limited to what the employee had specifically been engaged to produce in exchange for the employee’s usual salary.

* ***Steang Ltd’s Patents***⁹¹

The guidelines from *Harris’ Patent* were applied in *Staeng*, although here the outcome favoured the employer. The employee, Neely, claimed ownership of an invention which had been made as part of a collaboration between his employer,

⁸⁶ Id 31.

⁸⁷ Id 31-2.

⁸⁸ Id 29.

⁸⁹ Ibid.

⁹⁰ See further Monotti & Ricketson (n9) 155; Chandler (n45) 263; see also Bainbridge (n11) 500-01; (MoPP) (n40) para [39.10-39.11].

⁹¹ *Steang Ltd’s Patents* (n25).

Hellerman Electric ('Hellerman') and Staeng Ltd ('Staeng'). Neely and Staeng's employee, Robertson, were held to be joint inventors.⁹² Neely's claimed that he was entitled to a share of the invention to the exclusion of Hellerman in terms of section 7(2)(a) by virtue of his inventorship, and further that section 39(1)(a) did not apply.⁹³ He followed the argument in *Harris' Patent* that 'it is not reasonable to imply that an individual's obligations include the business of the invention that is not within the business of the employer'.⁹⁴ The court disagreed. Given Hellerman's wide-ranging activities, the court rejected the argument that because the subject matter was not within the employer's field of business, the invention could not have resulted in the course of Neely's normal duties.⁹⁵

As to whether it was within Neely's normal duties, he had been appointed as a 'Business Development Manager' primarily to source new products and new markets for Hellerman.⁹⁶ However, in light of Neely's actual involvement in the process of developing the new products, the court found that the fact that his 'role was centred primarily on the market rather than on the technical side' was not particularly significant as his job description, 'plainly [encompassed] an innovative and developmental aspect to his duties'.⁹⁷ Other considerations, including that he had in the past been involved in inventing for the employer, supported the court's finding that the activity fell within Neely's normal duties.⁹⁸

*** Greater Glasgow Health Board's Application⁹⁹**

Montgomery was employed by the Greater Glasgow Health Board ('GGHB') as a registrar in the Department of Ophthalmology when he invented an optical spacing device to measure the retina.¹⁰⁰ GGHB claimed ownership based on section

⁹² For comment on the approach to inventorship in this case see Chandler (n45) 262.

⁹³ *Staeng Ltd's Patents* 191.

⁹⁴ Id 199.

⁹⁵ Id 200.

⁹⁶ Id 194, see also 192.

⁹⁷ Id 198.

⁹⁸ For criticism of the court's finding based on the facts, see Chandler (n45) 264-5.

⁹⁹ [1996] RPC 207.

¹⁰⁰ Id 209.

39(1)(a), specifically that the invention was made as part of Montgomery's normal duties; and also on section 39(1)(b).

Montgomery's job description stated that his duties were 'clinical responsibilities' and further duties relating to the care of patients. His duties were 'primarily of a clinical nature concerning the assessment and treatment of patients and any teaching and research activities...were subsidiary'.¹⁰¹ The court rejected GGHB's argument that Montgomery had a duty to invent new diagnostic devices as part of his duty to apply his mind to the problems of patients.

Of particular interest is that the court noted that the nature of the medical profession was one where most doctors are employed and 'frequently devise new and better treatments'.¹⁰² It would place them in a tenuous position if 'just because they are employed and because the invention could be used for the purpose of their employment, the invention belongs to the employer'.¹⁰³ In this case, the device, while being a useful accessory to the doctor's clinical work, was not an integral part of it. It is submitted that this implies that activities associated with the nature of the profession – in this case that of a doctor – do not become 'duties' when the professional is employed.

Furthermore, based on Falconer J's reasoning on the application of section 39(1)(a) in *Harris' Patent*, the court found that since he had been at home doing his exam period when the invention was made, the circumstances were such that he had not been doing anything to do with carrying out his duties.¹⁰⁴ It could, therefore, not reasonably have been expected. Since the court found that the activity was not part of Montgomery's normal duties, it was not necessary to consider this aspect.

¹⁰¹ Id 210.

¹⁰² Id 223.

¹⁰³ Ibid.

¹⁰⁴ Ibid. The Patents Court also noted that its finding was consistent with the interpretation of the phrase 'course of employment' in early copyright legislation. The court referred to *Stephenson Jordan & Harrison v MacDonald & Evans* (1952) 69 RPC 10 which dealt with copyright in academic lectures. See also Chandler (n45) 264 for commentary on this case.

* ***LIFFE Administration and Management v Pinkava***¹⁰⁵

At issue was whether the employee ('Pinkava'), was entitled to inventions dealing with the electronic exchange of financial instruments. When Pinkava devised the inventions he was employed by LIFFE Administration and Management ('LIFFE') as a product manager. His employment contract terminated shortly thereafter and LIFFE claimed certain confidential information and the patent applications. The Patents Court found for LIFFE on the basis that the inventive activity fell within Pinkava's specifically assigned duties, and the circumstances were such that an invention might reasonably be expected to result from carrying out those duties.¹⁰⁶ Pinkava appealed.

The appeal court, in its determination of whether Pinkava had invented as part of his normal duties, found on the facts that at the relevant date it had become part of Pinkava's normal duties 'to consider and, if he could, devise and exchange tradable credit derivative or its equivalent'¹⁰⁷ although this had not been the case when the contract was originally entered into.¹⁰⁸ The court accepted that it is possible for duties which had not been included in the original written employment contract to in fact become normal duties as a consequence of how the parties perform in terms of the contract. Thus, the court opined that

'it is unsafe to have regard only to the terms contained in an initial written contract of employment. The actions of employee and employer in performance of the contract may give rise to an expansion or contraction of the duties initially undertaken by a continuous process of subtle variation.'¹⁰⁹

¹⁰⁵ *Pinkava* (n49).

¹⁰⁶ *Id* 673.

¹⁰⁷ *Id* 691.

¹⁰⁸ For further discussion see Chandler (n26) 166; Odell-West A 'Kelly v GE Healthcare Ltd: Employee innovation in health care: Deciphering ownership and the alchemy of "outstanding benefit"' (2010) 32 *EIPR* 453; MoPP (n61) [39.11].

¹⁰⁹ *Id* 690.

In relation to the further requirement that the invention must have been reasonably expected, the court rejected the approach in *Harris' Patent* that the words 'an invention' referred to the particular invention in question. According to the court, the requirement would be satisfied if an invention could reasonably be expected to result from the duties even if the particular invention could not.¹¹⁰ It consequently appears that if the employee has been employed to innovate this aspect will generally have been satisfied. The court found that

'there is no reason to interpret s.39(1)(a) by reference to any assumption of an intention (a) to enact either a test substantially more favourable to the employee than the old common law test or (b) to reproduce exactly the old common law test'.¹¹¹

Accordingly, the test was objective and there was

'no reason to imply any further condition or qualification to the effect that (1) the invention is similar to what might have been expected, (2) it provides a solution to a pre-identified problem, or (3) it achieves or contributes to the achievement of the aim or object of the employee's duties'.¹¹²

This approach arguably moves away from the view in *Harris' Patent* and tilts the enquiry in the employer's favour. Chandler regards this as problematic because 'the Court varied its angle of objectivity, eschewing any need to take account of the employer's assumed expectations in allocating those duties to the employee'.¹¹³ He argues that

's.39(1)(a) of the PA77 interposes the words "and the circumstances in either case" between its reference to duties and the reasonable expectation criterion, thereby showing that one flows from the other. If duties have been identified by looking at the facts from an employer's perspective, yet expectation is assessed neutrally, this link is broken and 'reasonable expectation' can so easily begin to form part of the duties themselves'.¹¹⁴

¹¹⁰ For further discussion see Chandler (n26) 167-8.

¹¹¹ *Harris' Patent* (n60) 695.

¹¹² *Ibid.*

¹¹³ Chandler (n26) 168-9.

¹¹⁴ *Ibid.*

Of interest is that the court considered whether the inventor in question had personal attributes which would influence whether an invention could be expected to result. Although this was not relevant to the decision, it does raise the issue of whether future courts will regard it as significant. The concern is that where an employee invents as part of normal duties, the ownership in the invention will depend on whether the employee is regarded as ‘clever’ enough for an invention to have been expected. Crudely, a ‘clever’ employee will lose the invention, and a ‘dull’ employee will own the invention even though it was made in the course of normal duties.¹¹⁵ This is untenable, and more so if one adopts the broad view that the provision refers to ‘any’ invention.

On the facts of the case, it is arguable that the invention would in any event have satisfied the *Harris’ Patent* approach. However, it is clear that the court’s rejection of the narrow application serves to widen the net in favour of employers.

(c) Section 39(1)(b) of the BPA 1977

Section 39(1)(b) extends the employer’s reach to inventions made by employees who do not fall under section 39(1)(a) but whose position in the enterprise is such that they have an obligation to act in the employer’s interest. The BPA 1977 does not define ‘special obligation’, but it would appear to be linked to the employee’s seniority in the company.¹¹⁶

To determine whether or not a person is in such a position requires an examination of his or her actual responsibility in the company, as was shown in *Harris’ Patent* where the court found that even though the inventor had a senior title, his limited powers did not indicate that he was in a position of sufficient seniority to impose an obligation to further the employer’s business. According to Falconer J, ‘the extent and nature of the special obligation to “further the interests of the employer’s

¹¹⁵ See further Bainbridge (n11) 502.

¹¹⁶ See further Torremans (n18) 97; Hodkinson (n46) 11; Howell C ‘Compensation at last for employee inventors: *Kelly v GE Healthcare Ltd*’ (2010) 1 *Journal of Business Law* 45; Phillips (n52) 10-11; Bainbridge (n11) 500.

undertaking” will depend on the status of the employee and the attendant duties and responsibilities of that status’.¹¹⁷ In contrast, in *Staeng* the fact that the inventor was a senior marketing executive contributed to the finding that he met the requirements of section 39(1)(b).¹¹⁸

Once this first leg of the enquiry has been completed, it must be shown that the inventive activity happened in the course of the employee carrying out work duties. Unlike the first two situations, the employer may have title to the invention even if no invention was expected. It is likely that the invention must be one which furthers the interests of the employer, in other words, it must be to the benefit of the employer’s specific undertaking. It is not clear whether or not this means that an invention which is completely unrelated to the employer’s business will nonetheless fall to the employer.¹¹⁹

(d) Observations on section 39(1)(a) and (b)

The statutory entitlement provisions have not attracted particularly vociferous criticism or comment. This is probably because the shift was regarded by many as reflecting the *status quo* under common law.¹²⁰ Pila sums up the policy reasons for the British legislature’s introduction of section 39 as ‘the longstanding view that business efficacy, industrial relations and considerations of private justice’ required that employers be recognised given that they remunerated employee-inventors.¹²¹ She notes further that the decision to divest inventors of ownership as opposed to offering employers a licence ‘was, in 1978, unsurprising; pragmatism having long

¹¹⁷ Harris (n60) 37-8.

¹¹⁸ In this case, the court found in favour of the employer under s 39(1)(a) in any case. See further Torremans (n18) 98; Chandler (n45) 265-6.

¹¹⁹ In *Greater Glasgow Health* [1996] RPC 207 s39(1)(b) was raised as a ground for employer’s ownership but was not argued. See further Phillips (n52) at 10. See also Hodkinson (n46) 11 for a comment on the effect of this provision.

¹²⁰ White Paper ‘Intellectual Property and Innovation’ (Cmnd 9712, 1986) para [34]. See further Phillips (n52) 10 on how he anticipated the provision would be interpreted.

¹²¹ Pila (n1) 290-1

been regarded as more important than the “difficult legal and constitutional questions”¹²².

However, it is not necessarily entirely in the employer’s favour. The statutory regime arguably improves the lot of the employee from the common-law perspective even if this was not the intention of the legislature, by reducing the range of inventions which fall into the employer’s control.¹²³

While the shift to a statutory regime signals a move away from the vagueness that plagues reliance on common-law rules, the provisions bring their own challenges.¹²⁴ At the time, Phillips was of the opinion that s39 was easier to apply than relying on implied contract and trust and which required the consideration of factors like the employee-inventor’s status and qualifications, and the use made of the employer’s resources. Indeed, it seems that the provisions attempt to avoid this external approach by explicitly delineating those inventions which fall within the provisions, as opposed to relying on general phrases like ‘course and scope of employment’. Now the criteria for ownership of the invention is limited to ‘(i) the causal relationship of the inventor’s employment duties to the invention and (ii) the reasonable expectation that invention will flow from the performance of those duties’.¹²⁵ Employer-ownership is linked to an expected inventive output associated with the employee carrying out his or her duties.

However, it is clear from the cases that legislative terms without definition raise their own issues of interpretation. This is evident in the interpretation of the phrase ‘normal duties’. The difficulty arises where it is not recorded in the employment contract or elsewhere what the duties are, and it is not evident from the practice of the parties that the inventive activity can be considered ‘normal’. As a result, the

¹²² Ibid.

¹²³ For example the comments in *Pinkava* that it was not the intention to make it more employee-focused. Watts et al, however, note that: ‘The Act was generally viewed as being narrower, and therefore more favourable to employee inventors than the previous (common law) test of whether an employee made an invention in the course of his employment’. See Watts et al ‘How to avoid inventor disputes with employees’ (2007) 170 *Managing Intellectual Property* 55; Phillips (n52) 9.

¹²⁴ See Chandler (n45) 262.

¹²⁵ Phillips (n72) 34.

scope of the provisions depends on the court's approach and also potentially raises the temptation to turn to the common-law employment contract or elsewhere to find meaning.¹²⁶ Phillips recognised this in his cautionary hope that 'in interpreting this phrase the courts will not make undue reference to those cases which deal with the vicarious liability of employers for their servants' torts, for in those instances the courts have sought what is considered to be a desirable social end by construing the phrase "course of employment" as widely as possible'.¹²⁷

Linked to this concern is the question of whether a single set of rules is appropriate for all sectors. For example, it has been argued that the provisions of section 39 do not fit comfortably in an academic and professional setting, primarily because the nature of employment in those contexts is quite specific.¹²⁸ According to Pila, cases like *LIFFE*, *Pinkava* and *Greater Glasgow Health Board* reflect a recognition by the courts that not all employment situations can be treated equally, and that, in particular, professional and academic contexts 'attract different considerations when determining ownership of inventions'.¹²⁹ Therefore, the balancing of rights between the academic-employee and the employer, for example, may require a different set of entitlement options.¹³⁰

5.2.2.2.4 *Entitlement through agreement*

Section 7(2)(b) is a basis for employer ownership in circumstances falling outside of section 39(1). It provides that the invention will be owned by any person or persons 'who...by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the

¹²⁶ Hough & Spowart-Taylor (n1) 159-60. The authors take particular issue with the decision in *Staeng's Patent* as having given 'primacy to a tenuous contractual provision rather than the day-to-day functions of the employee'.

¹²⁷ Phillips (n52) 11.

¹²⁸ Pila (n56) 93-4. See also Cornish (n48) 16-17 on why patents generated by university employees should be treated differently.

¹²⁹ Pila (n55) 99. See further Pila J 'Academic freedom and the courts' (2010) 126 *Law Quarterly Review* 347. See Pila (n1) 265ff for her analysis of the historical context that led to s39.

¹³⁰ For more on the ownership of employee-inventions in the academic context in Britain, see Stallberg (n44) 501ff and Odell-West (n108) 449ff in relation to the NHS.

making of the invention entitled'.¹³¹ Therefore, the employer could enter into a preinvention contract with the employee to acquire ownership of inventions which, for example, are not made as part of the employee's normal duties.

However, the BPA 1977 restricts the employer's use of pre-invention assignments to acquire ownership of such inventions.¹³² Section 42 provides that any contract relating to inventions made by the employee 'which diminishes the employee's rights in inventions of any description made by him after the appointed day and the date of the contract, or in or under patents for those inventions or applications for such patents, shall be unenforceable against him...'.¹³³

Section 42 is meant to temper the inequalities in the bargaining power between the parties and is a way of ensuring that employees do not assign future inventions which would otherwise have belonged to them.¹³³ Where the contract is not unenforceable under section 42, the parties are free to enter into agreements in relation to the invention, subject to any other legal limitation outside the legislation – for example, restrictions of restraint of trade agreements.¹³⁴

5.2.2.3 Attribution for employee-inventions

There is nothing to suggest that the right of the inventor to be named falls away where the invention belongs to the employer. Employee-inventors are therefore

¹³¹ BPA 1977 s7(2)(b).

¹³² For the uncertainties related to this provision, see Cornish et al (n7) 288. See further Wolk S (ed) *Ownership of the Copyright in Works and the Patent Right in Inventions Created by Employees* (2002) 30; Gudmestad T 'Patent law of United States and the United Kingdom: A comparison' (1982) 5 *Loyola of Los Angeles International and Comparative Law Review* 185-6.

¹³³ This provision 'implements the proposal of the Banks Committee that employers should be prevented from securing by way of express contract the rights in any inventions which the employee had not yet made and which, apart from that contract, would belong to the employee to the exclusion of the employer.' Phillips (n52) 26.

¹³⁴ See, for example, *Electrolux Ltd v Hudson and others* [1077] FSR 312, 326.

entitled to the attribution right which ensures that an employer cannot suppress an employee's association with the invention.¹³⁵

5.2.3 Compensation for Employees as a Consequence of Section 7(2)(b)

5.2.3.1 Basis for compensation claims by employee-inventors

Where the employer has acquired title to an employee-invention by virtue of the statutory ownership rule, the employer is in some instances, burdened with an obligation to pay compensation to the employee. Although the employee may have no rights to the invention, he or she may apply for compensation under section 40(1) which provides that

'[w]here it appears to the court or the comptroller on an application made by an employee within the prescribed period that -

(a) the employee has made an invention belonging to the employer for which a patent has been granted,

(b) having regard among other things to the size and nature of the employer's undertaking, the invention or the patent for it (or the combination of both) is of outstanding benefit to the employer, and

(c) by reason of those facts it is just that the employee should be awarded compensation to be paid by the employer,

the court or the comptroller may award him such compensation of an amount determined under section 41 below.¹³⁶

Although the introduction of the compensation provision was a radical departure from the common-law position,¹³⁷ they have been described as a 'fairly conservative middle ground'.¹³⁸ It is submitted that the following five factors contribute to its benign effect.

¹³⁵ See Meinhardt (n22) 64.

¹³⁶ Section 40(1).

¹³⁷ Wotherspoon (n6) 120.

¹³⁸ Tarr J & McBratney A 'A fork in the Australian road? Ownership of patented employee inventions' (2013) 35 *EIPR* 195.

Firstly, the provisions do not apply where there is already a collective agreement which 'provides for the payment of compensation in respect of inventions of the same description as that invention to employees of the same description as that employee'.¹³⁹ The Act does not provide for the employee to bypass the collective agreement if the amount that a claim under the statutory compensation provision might yield, is greater.¹⁴⁰

Secondly, it is incumbent on the employee to initiate the application for compensation,¹⁴¹ although he or she need not be in the employ of the employer when the application is made. Thirdly, the application is limited to those inventions for which a patent has been granted.¹⁴² Where the employer has not applied for and been granted a patent, he or she has no claim to compensation even if the unpatented invention is of benefit to the employer.¹⁴³ Although it appears that s39 applies to all inventions, as mentioned above, the compensation provisions are tied to the grant of a patent.

Fourthly, the invention, the patent, or the combination of the two must be of outstanding benefit to the employer.¹⁴⁴ This means that the benefit must be outstanding in monetary terms¹⁴⁵ and refers to the actual, rather than potential benefit to the employer.¹⁴⁶ The merit of the invention is irrelevant,¹⁴⁷ and the onus

¹³⁹ Section 40(3). See s40(6) for the definition of 'relevant collective agreement' and MoPP (n55) [40.16].

¹⁴⁰ See Gudmestad (n132) 173ff; Wolk (n132) 30.

¹⁴¹ See MoPP (n40) [40.09] for more on the application requirements.

¹⁴² BPA 1977 s40(1)(a).

¹⁴³ See further Hodgkinson (n46) 17 where the author considers whether the employee could apply for the patent and so claim under the provision.

¹⁴⁴ BPA 1977 s40(1)(b).

¹⁴⁵ BPA 1977 s43(7) provides that 'benefit' means 'benefit in money or money's worth'.

¹⁴⁶ See Hart et al (n12) 44; Wolk S 'Remuneration for employee inventors— Is there a common European ground? A comparison of national laws on compensation of inventors in Germany, France, Spain, Sweden and the United Kingdom' (2011) 42 *IIC* 294.

¹⁴⁷ Whether or not the invention is inventive is part of the patentability criteria.

lies on the employee to show the existence of the benefit.¹⁴⁸ When the compensation provision was originally introduced, the employee had to prove that the *patent* was of outstanding benefit. Consequently, employers were able to refute a claim by arguing that the benefit had not been derived from the actual patent although it may have been related to the invention. The Patents Act 2004 sought to alleviate this burden by amending section 40(1) of the BPA 1977 to include that the invention also be considered relevant to the determination of whether there was an outstanding benefit to the employer.¹⁴⁹ The amendment only applies to patent applications made after 1 January 2005.

Fifthly, it must be 'just that the employee should be awarded compensation by the employer'.¹⁵⁰ Simply because the benefit is in fact outstanding, does not of itself mean that it is just that the employer should pay the employee more than his or her usual salary.

If an application is successful, the calculation of the amount must be made in accordance with section 41(1) which provides that the amount awarded must be such 'as will secure for the employee a fair share (having regard to all the circumstances) of the benefit which the employer has derived, or may reasonably be expected to derive'¹⁵¹ from the invention,¹⁵² the patent for the invention,¹⁵³ or 'the assignment, assignation or grant of (i) the property of any right in the invention, or (ii) the property in, or any right in or under, an application for the patent'.¹⁵⁴

¹⁴⁸ In *Memco-Meds's Patent* [1992] RPC 403 Aldous J rejected the approach in *GEC Avionics Ltd's Patent* [1992] RPC 107 that the initial burden of proving that no benefit was derived from the patent fell to the patentee.

¹⁴⁹ Patents Act 2004 s10. The provision came into effect on 1 January 2005. See further Hart et al (n12) 44; Lee Y & Langley M 'Employees' inventions: Statutory compensation schemes in Japan and the UK' (2005) 27 *EIPR* 252.

¹⁵⁰ Section 40(1)(c).

¹⁵¹ Section 41(1).

¹⁵² Section 41(1)(a).

¹⁵³ Section 41(1)(b).

¹⁵⁴ Section 41(1)(c). Provision is made to ensure that employees enjoy the full benefit of a fair share by providing for arm's length transactions – s41(2).

The court or Comptroller is directed by the Act to take the following four matters, along with any others, into account in the calculation of a 'fair share'

- (a) the nature of the employee's duties, his remuneration and the other advantages he derives or has derived from his employment or has derived in relation to the invention under this Act;
- (b) the effort and skill which the employee has devoted to making the invention;
- (c) the effort and skill which any other person has devoted to making the invention jointly with the employee concerned, and the advice and other assistance contributed by any other employee who is not a joint inventor of the invention; and
- (d) the contribution made by the employer to the making, developing and working of the invention by the provision of advice, facilities and other assistance, by the provision of opportunities and by his managerial and commercial skill and activities.¹⁵⁵

To date, there have been few reported cases on the compensation provisions with only one being in favour of the employee.¹⁵⁶ The sticking point seems to be the burden of showing an 'outstanding benefit'. Because of the novelty of this provision, an overview of the cases provides the best means to illustrate the practical challenges which have emerged.

* ***GEC Avionics Ltd's Patent***¹⁵⁷

In *GEC Avionics*, the first case before the Comptroller to be decided under section 40, Ellis was employed by GEC when he invented a 'head-up display' ('HUD') for aircraft cockpits which he patented in various jurisdictions.¹⁵⁸ GEC owned the invention under section 39 of the BPA 1977. It had secured a contract for the supply of HUDs under the patent to the value of \$72 million, as well as two other contracts related to other HUDs worth \$75 million each. The issue was whether Ellis was entitled to compensation under section 40.

¹⁵⁵ Section 41(4).

¹⁵⁶ See Torremans (n18) 99 for more on the first three cases heard under this provision.

¹⁵⁷ *GEC Avionics* (n148).

¹⁵⁸ It was accepted that the provisions of the BPA 1977 applied to the UK and all corresponding patents, but only applied to the other jurisdictions when explicitly claimed. *GEC Avionics* (n148).

The Comptroller's first task was to respond to the claim by GEC Avionics that Ellis had not shown that any monetary benefit had derived specifically from the patent. The Comptroller found that the initial evidential burden showing a *prima facie* against a benefit having derived from the patent fell to the patentee. This is because it is inherent in the nature of a patent that there is a benefit to be derived as 'where one secures a monetary benefit as a result of a contract for the sale of goods or services which are the subject of an invention there is a presumption, where that invention is covered by a patent, that at least a part of that benefit derives from the presence of the patent'.¹⁵⁹ GEC failed to show that there had been no benefit.

Ellis, however, had the burden of showing that the *patent* was of outstanding benefit to GEC. For the Comptroller, 'outstanding' referred to 'something out of the ordinary and not such as one would normally expect to arise from the results of the duties that the employee is paid for'.¹⁶⁰ This requirement is included because under section 39(1) employer-ownership only arises where the inventor is under a duty to engage in inventive activities. In this case, Ellis' salary was regarded as a reward for his inventive activity which arose as a consequence of the nature of his employment.¹⁶¹ Since the employer was accustomed to securing contracts of that size, the patent in question was not outstanding benefit.¹⁶²

* ***British Steel PLC's Patent***¹⁶³

GEC Avionics was followed by *British Steel* in which the employee-inventor, Monk applied for compensation under section 40 from his ex-employer, British Steel. The invention, an outlet valve for vessels containing molten material, was regarded as 'a great advance' and Monk received an MBE for it, as well as an *ex gratia* payment of £10 000 from British Steel.¹⁶⁴ The Comptroller agreed with the approach in *GEC Avionics* that an 'outstanding' benefit implied that 'something out of the ordinary'

¹⁵⁹ Id 112-13.

¹⁶⁰ Id 115.

¹⁶¹ Id 114-15.

¹⁶² Id 115. See further Lee & Langley (n149) 252 and Torremans (n18) 99.

¹⁶³ [1992] RPC 117.

¹⁶⁴ Id 121.

was required, and that this implied something ‘superlative’¹⁶⁵ and required a ‘correspondingly stiff’ test.¹⁶⁶

On the facts, the Comptroller found that the total benefit to British Steel for which there was evidentiary support was no more than 0,08 per cent of its profits and less than 0,01 per cent of its annual turnover. As a result, having regard to the nature and size of the undertaking, the patent was not of outstanding benefit to the employer.¹⁶⁷ In this case, although the court regarded the reference to ‘undertaking’ in section 40 as referring to British Steel as a whole, it did not rule out that the term could refer to a sub-unit of the employer’s organisation, for example, a particular sector or site.¹⁶⁸

The court noted that section 40 refers to actual rather than potential benefit, and that ‘whether an employer patentee chooses to exploit an invention may depend as much on his commercial strategy as on the intrinsic worth of the invention’.¹⁶⁹ In coming to its finding, it rejected Monk’s argument that British Steel would have benefitted more had it adopted a different exploitation strategy. Here Monk brought the application a mere four years after the patent had been granted – a fact which would have required the invention be shown to be exception in a very short period of time.¹⁷⁰ The claim was rejected mainly as the benefits had not yet accrued so that ultimately the claim was premature.¹⁷¹

* ***Memco-Med Ltd’s Patents***¹⁷²

*Memco-Med*¹⁷³ was the first case dealing with section 40(1) before the Patents Court. A key aspect is that the court appeared to differ from the two earlier cases which held that the onus of establishing a benefit to the employer rested initially on

¹⁶⁵ Id 122.

¹⁶⁶ Ibid.

¹⁶⁷ See Hart et al (n12) 44-5.

¹⁶⁸ *British Steel* (n163) 122.

¹⁶⁹ Id 127. See further on this case, Lee & Langley (n149) 253.

¹⁷⁰ *British Steel* (n163) 128.

¹⁷¹ See further Wotherspoon (n6) 123.

¹⁷² *Memco-Med* (n148).

¹⁷³ The previous two cases had been before the Comptroller.

the employee.¹⁷⁴ The patent in question involved units to detect persons near lift doors and so prevent the doors from closing on them. The employee-inventor, Trett, claimed that a sizeable portion of Memco-Med's turnover was as a result of the invention. The lift detector units were sold to only one client, and although Trett was able to show that the employer's sales to the client had increased, he could not prove that this was a result of the patent. Memco-Med had done business with the client prior to the patent, and the history between the two companies was such that they would have continued doing business even had there been no patent for the invention.¹⁷⁵

As to what would constitute an outstanding benefit, the court found that while it was 'something special' and 'more than substantial or good', a redefine ought not to be attempted because '[c]ourts will recognise an outstanding benefit when it occurs'.¹⁷⁶

*** *Shanks v Unilever* [2014] EWCA 1647 (Pat)**

Shanks was employed by Unilever Central Resources Ltd ('UCR'), a non-trading research company wholly-owned by Unilever plc. During his employment he invented an electrochemical device for testing glucose levels in blood samples, and a method for manufacturing the device, valuable in treating diabetes.¹⁷⁷ The invention belonged to UCR in terms of section 39(1) of the BPA 1977, and in terms of standard Unilever policy, the rights were assigned by UCR to Unilever PLC for £100 which, in turn, assigned some of the rights to Unilever NV for £100. Unilever NV further assigned its USA rights.¹⁷⁸

A number of patents (the 'Shanks Patents') were applied for and as Unilever was not interested in expanding into the field of blood-glucose testing, it licensed the patents

¹⁷⁴ See further Wotherspoon (n6) 128.

¹⁷⁵ *Memco-Med* (n148) 417. See further Howell (n116) 48-9; See Wotherspoon (n6) 125.

¹⁷⁶ Id 414. See comment in Hobson A & Shafran T '*Kelly and Chiu v GE Healthcare Limited: Pharmaceutical companies at risk of successful employee-inventor compensation claim following landmark ruling*' (2009) 31 *EIPR* 524.

¹⁷⁷ See *Shanks v Unilever plc and others* [2014] EWCA 1647 (Pat) paras [10]-[11] for details of the invention.

¹⁷⁸ Id para [13].

to various other companies.¹⁷⁹ The patents were managed by a Unilever subsidiary company which in 2001 was sold, together with the Shanks Patents, for £103 million. In the application for compensation by Shanks, the Comptroller found that the total gross benefit Unilever had obtained from the Shanks Patents, namely £24,5 million less the cost of £250 000 for maintaining the patents,¹⁸⁰ was not outstanding, and consequently Shanks's claim was rejected. Shanks appealed.

The court followed the approach of Floyd J in *Kelly and Chiu* in so far as it explained the rules relating to compensation, and in particular that court's consideration of the law relating to what constitutes an 'outstanding benefit'.¹⁸¹ The approach adopted by the Comptroller and the appeal court was to quantify the benefit, consider Unilever's undertaking, and then to decide whether it was outstanding.¹⁸² A multifactorial approach which considers

'the benefit from the number of different perspectives: in light of Unilever's profits and turnover; in relation to patents in general; in the context of Unilever's licensing activities; in view of Unilever's patent activities; and compared to Unilever's activities in general',¹⁸³

was used by the Comptroller and approved by the appeal court.

As to the first part of the enquiry – the quantification of the benefit – the amount of £24,5 million was contested by both Shanks and Unilever. Shanks claimed that it ought to be increased to reflect the time-value of the money because while Shanks lodged his claim in 2006 and the matter came before the Comptroller six years later, Unilever had received payment attributed to the patents between 1996 and 2004.¹⁸⁴ The court also discounted the amount to reflect the corporation tax Unilever had paid

¹⁷⁹ Id para [22].

¹⁸⁰ Id para [25].

¹⁸¹ Id para [2] quoting from *Kelly and Chiu v GE Healthcare Ltd* [2009] EWHC 181 (Pat). Although *Kelly and Chiu* was heard under the post-2004 amendment, it was decided before *Shanks v Unilever* reached the court. See Harris P 'Employee compensation for inventions of outstanding benefit' (2015) 37 *EIPR* 63 for comment.

¹⁸² Id para [30].

¹⁸³ Id para [65].

¹⁸⁴ For a summary of the key aspects of the case, see Lee C 'No Compensation, No Consolation – or no Thanks, Shanks' IPKAT 27 May 2014.

on the income, since [‘t]ax paid to the State is not a benefit to the employer’.¹⁸⁵ However, Unilever’s further claim that its research and development costs should be deducted was rejected because it was not shown that Unilever would not have undertaken the research and development without a patent.¹⁸⁶

The court found that the money did not constitute a benefit and that even if it did, it was not one derived from the patents.¹⁸⁷

The second aspect of the enquiry – the size of the undertaking – saw Shanks claiming that the separate sectors or divisions made up the undertaking for the purposes of section 40. The court agreed with the Comptroller’s view in favour of Unilever that the structure of the company was irrelevant because the research was being exploited by the entire group.¹⁸⁸ In this light, the amount of the benefit was not outstanding, particularly when one considers that it was generated over an eight-year period. Further, the fact that Shanks had claimed to have gone beyond his duties in making the invention, was not relevant to the determination of whether the benefit was outstanding.¹⁸⁹

As the court noted, this case was ‘unusual’ in that the calculation of the monetary benefit was relatively easy because the patents had been licensed by Unilever to third parties. Therefore, the difficulty experienced in earlier cases in trying to prove the benefit had been derived from the patent and not the invention, was not a deterrent.

* ***Kelly & Chiu v GE Healthcare Ltd***¹⁹⁰

In *Kelly and Chiu* the first (and only) reported matter in which the employee was successful, Floyd J observed as part of his judgment that when the Bill proceeded through the House of Lords, *Hansard* records Lord Nelson of Stafford as saying: ‘I

¹⁸⁵ Id para [45].

¹⁸⁶ Id paras [55]–[58].

¹⁸⁷ *Shanks* [n176] para [40].

¹⁸⁸ Id para [62] quoting the Comptroller.

¹⁸⁹ Id paras [70]–[81].

¹⁹⁰ *Kelly & Chiu* (n181).

have never seen such a collection of vague terms in my life. What compensation, who is responsible, what is outstanding benefit, what value is to be put on this and what on that?’ and ‘Who is to be the Solomon who will sort out all these vaguenesses at the end of the day and adjudicate on compensation when a claim is made, I hesitate to think’.¹⁹¹

Kelly & Chiu which was heard before the amendments introduced in 2005.¹⁹² The matter before Floyd J in the Patents Court was whether two of the three inventors of a compound sold under the name ‘Myoview’ – and in relation to which a number of patents had been filed – were entitled to compensation. The inventors, Kelly and Chiu, were research scientists employed by Amersham. Amersham was subsequently taken over by GE Healthcare Limited (‘GE’). The court undertook a comprehensive examination of employee-inventions in order to establish the principles on which it based its decision.¹⁹³

As regards what constituted an outstanding benefit, the court accepted the general approaches in *Memco-Med*, *British Steel*, and *GEC Avionics* that ‘outstanding’ means ‘something special’ or ‘out of the ordinary’ and more than ‘substantial’, ‘significant’ or ‘good’¹⁹⁴ – it must exceed the normal results of the employee’s execution of his or her duties for which he or she is paid. According to the court, the determination of the benefit ‘must be in light of all the available evidence as to what the patent has achieved, and may reasonably be expected to achieve. It is not a hypothetical valuation exercise to be performed at the date the invention was made, and before profits have been earned’.¹⁹⁵ This is a qualitative assessment and while the inventiveness of the employee is irrelevant here, the effort and skill would play a role in the quantum of the award.¹⁹⁶

¹⁹¹ Id para [7]; Howell (n116) 42.

¹⁹² MoPP (n40) para [41.05]; Cornish et al (n7) 288.

¹⁹³ See Bainbridge (n11) 503 for a summary.

¹⁹⁴ *Kelly & Chiu* (n181), paras [17]-[27].

¹⁹⁵ Id para [56].

¹⁹⁶ Id para [23].

As to whether the benefits were outstanding, the court found that the patents were significant in ensuring that Amersham was able to conclude a number of lucrative deals on favourable terms.¹⁹⁷ In addition, Amersham would have been in crisis had it not been for patents at that time. Consequently, the court did not limit the benefit to sales generated, but rather considered that the patents had ‘helped transform Amersham’.¹⁹⁸ The benefit – pegged at £50 million – was found of outstanding benefit having regard to the size and nature of Amersham, and was ‘far beyond anything which one could normally expect to arise from the sort of work the employees were doing’.¹⁹⁹ Howell has criticised the court’s approach as conflicting with the requirement of section 43(7) that the benefit means money or money’s worth because it had not actually been established how much benefit the company had derived from its enhanced worldwide status.²⁰⁰

In the end, after considering the factors required by the BPA 1977 on what constituted a fair share of the patent for the employee, the court found that it may ‘in principle lie somewhere in the broad range from nil to as much as 33% or beyond’.²⁰¹

As to whether an award was just, the court adopted the view that while it must relate to something additional to the facts which had already been established, it was best not to try to ‘categorise the types of situations where an award may be unjust’ and that [t]he court will recognise such situations when they arise’.²⁰² Therefore, the fact that the employer has derived an outstanding benefit is of itself not an indication of the justness of the compensation.

Of particular interest is that the court considered the meaning of the word ‘compensation’ in the Act. It rejected the view that it referred simply to a rectification of ‘an injustice or loss to the employee, brought about by inequality of bargaining

¹⁹⁷ Id paras [120], [124], [133].

¹⁹⁸ Id para [150].

¹⁹⁹ Id [148].

²⁰⁰ Howell (n116) 47.

²⁰¹ At [202]-[203]. See also Hobson (note 175) at 525 on the determination of the amount to be awarded to the two inventors.

²⁰² *Kelly & Chiu* (n181) para [41].

power, and ensuring that the employee's remuneration package meets an acceptable level'.²⁰³ Rather, in the context of section 40, the court found that the provision was aimed at compensating for 'the disparity between the benefits received by the employee and the benefits received by the employer'.²⁰⁴ There is an inadequacy in the remuneration which the employee derives from invention which is seen in the disparity in the benefits which accrue to the employer and employee. This situation only arises with hindsight because at the time of the agreement between the parties, the actual benefit could not have been fully contemplated. However, it is only where the invention is of outstanding benefit and the 'disparity in benefit between the employer and employee is extreme' that the compensation in s40(1) kicks in.²⁰⁵ Furthermore, the provisions speak of a 'fair share' and make no mention of remedying loss.²⁰⁶

5.2.3.2 Observations on the statutory compensation provisions

Torremans's warning to employees that before they 'emboldened by these provisions rush out to buy a new Daimler or two' they need to be aware that 'the legislation is not designed to produce a bonanza of payments', now appears apposite.²⁰⁷ The cases certainly dispel the fear that the statutory compensation scheme would provide an 'undeserved goldmine' or windfall for inventive employees who would in any event be entitled to remuneration regardless of whether or not their research efforts resulted in a patent or any profit for the firm.²⁰⁸

It is impossible to say whether or not the provisions are successful in general terms. This must depend on their purpose which, at least in the current formulation, is ostensibly to ensure an equitable distribution between the employer and employee of

²⁰³ Id paras [23], [43].

²⁰⁴ Id para [52].

²⁰⁵ Ibid.

²⁰⁶ Id para [51], [59]. For a summary of the principles adopted in the judgment see para [60]. See further Howell (n116) 50-1.

²⁰⁷ Torremans (n18) 99.

²⁰⁸ Howell (n116) 41.

benefits derived from the invention. While it is clear that the provisions of section 39(1) are based on the common-law position, the introduction of statutory compensation in favour of employees is novel. The possibility of the scheme arose in the context of deliberations on the efficacy of the British patent system, and appears to be linked to both an incentive function to encourage employees to invent, and to a desire to reward employees in a way that represents a fair distribution of the profits of the invention. It is clearly a measure to counter the reliance on the employment contract to ensure an acceptable balance between the employer and employee-inventor within the patent law context. Cornish's view is that the introduction of the compensation payment has little to do with incentivisation but '[r]ather expresses a resurgent feeling for the demands of natural justice – a belief that the inventor should not go unrewarded for the fruits of his intellectual endeavour', and further that this 'inspiration has coalesced with the recent tendency to cast legal protection around contracting parties who as a class may not well appreciate the unfavourable consequences of their bargains'.²⁰⁹

It is impossible to determine how many companies have settled compensation claims given the sensitive nature of such agreements, and it is thus problematic to determine whether the introduction of the compensation provisions have in fact stimulated innovation. It may well be that the threat of a section 40(1) claim by an employee-inventor has encouraged employers to offer greater incentives to inventive employees. A number of factors would affect its efficacy as an incentive to encourage the employee.

The first is that the possibility of a claim only arises where the benefit is outstanding for the employer. The purpose of the provisions is to acknowledge only those inventions which have had a revolutionary impact in industry'.²¹⁰ It does not act as an incentive for the employee to engage in patentable inventive activity generally. For that sort of activity, in the absence of any other internal incentive schemes the employee-inventor's salary is the only benefit linked to the invention, albeit very

²⁰⁹ Cornish et al (n7) 287.

²¹⁰ Hodgkinson (n46) 18.

generally, that can be claimed. As Bainbridge observes of this use of compensation in cases of outstanding benefit only,

‘the employee has been given consideration for his work, that is his salary, and the employer may have been prepared to pay the employee his salary even if no useful invention resulted, simply as a speculative investment in the hope that a valuable invention would result’.²¹¹

This does not mean that the prospect of compensation in the Act cannot also serve as an incentive, but its formulation certainly does not have incentivising the employee as its primary goal.

A second factor is the logistical difficulty in trying to institute a claim. The onus of showing that the invention is outstanding for the employer rests with the employee. The original formulation – that the outstanding benefit must be derived from the patent – made it difficult for employees to counter arguments from employers that the benefit had not been directly derived from the actual patent. Although this ‘loophole’ may have been closed by the 2004 amendment, it does not make things much easier for employees.²¹² It will always be an uphill battle for an employee, without direct and free access to the employer’s records, to establish what role the invention or patent actually played in the employer’s commercial success.²¹³ The employee must prove that other factors – goodwill, pricing structures, and marketing – were not the reason for the benefit.²¹⁴ If the employee cannot prove and quantify his or her contribution, there is little chance of a successful compensation claim.²¹⁵ In addition, different types of corporate structuring and its effect on the size and nature of the business, are additional complexities in attempts to establish the benefit. *Unilever v Shanks* offers a prime example.²¹⁶

²¹¹ Bainbridge (n11) 502.

²¹² See Wolk (n146) 293; Hobson (n176) 526.

²¹³ See Hough & Spowart-Taylor (n1)161, Wolk (n146) 295.

²¹⁴ Jaworski (n45) 133.

²¹⁵ For example, in *British Steel* although the employee was able to show some benefits, he could not quantify them.

²¹⁶ Phillips (n52)15.

Furthermore, the potentially adversarial nature of the process which requires that the employee apply for statutory compensation against the employer, would seem almost inevitably to limit the claims to situations where the employment relationship has ended.²¹⁷

As an incentive scheme it falls short for at least the reasons mentioned above, but section 40 has also been criticised as a redistributive scheme in that an invention may have generated millions of rand but not be classified as outstanding.²¹⁸ In addition an invention may only prove to be outstanding after an extended period.²¹⁹ Alternately, the invention may do well initially, and then taper off so it may be easier to show an outstanding benefit at that early stage.²²⁰

A more cynical factor is that the approach is also open to manipulation by employers who can avoid the compensation provision by electing not to apply for a patent and simply rely on secrecy or lead-time to secure a competitive edge.²²¹ An employer could assign the patent and the assignee could benefit enormously, in which case the employee has no claim under section 40.²²²

Finally, deferring to a collective agreement in certain cases potentially deprives the employee of certain statutory rights he or she would otherwise have had.²²³ Although collective bargaining is a labour law mechanism to act against the imbalance of power between employers and employees in the bargaining process, in this case, it may limit the incentive effect of compensation if it reduces the compensation the employee would have otherwise been able to claim.

It is evident that the compensation provisions are more readily justified on the basis that they are a post-*facto* way of ensuring that the benefits associated with the patent

²¹⁷ Lee & Langley (n149) 253.

²¹⁸ Hough & Spowart-Taylor (n1) 159.

²¹⁹ Hough & Spowart-Taylor (n1) 160-1.

²²⁰ Bainbridge (n11) 505.

²²¹ Watts (n123) 502.

²²² Monotti & Ricketson (n9) 157.

²²³ See Hodkinson (n46) 253. See also Cornish (n54) 84 that unless there is a closed-shop agreement, an employer may have two different approaches to compensation.

are fair given that there is a lack of knowledge at the time of the invention as to its actual worth.

5.3 THE UNITED STATES OF AMERICA

5.3.1 Introduction

In the USA the foundation for patents is the Constitution which empowers Congress ‘[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries’.²²⁴ The Patents Act, 1790, was one of the earliest pieces of US legislation. The current enabling patent law is in the United States Code Title 35 (‘35 USC’).²²⁵

Because of the dual-tiered legal system comprising of national (or federal) law and state law, the allocation of ownership in patentable employee-inventions is regulated through a combination of these two sources.²²⁶ The federal law governs the creation and scope of patents, but makes no specific provision for the ownership of

²²⁴ US Constitution art1 s8 cl8. Much has been written about the way in which the clause is framed to limit the protection accorded authors and inventors. See, for example, *Graham v John Deere Co* 383 US 1 5-5 (1966); Halpern S, Nard CA & Port KL *Fundamentals of United States Intellectual Property Law: Copyright, Patent, Trademark* 3ed (2011) 192; Andermann R ‘Employee inventors, the dual ladder, and the useful arts: From Thomas Paine to the “Dilbert Boycott”’ (2002) 1 *John Marshall Review of Intellectual Property Law* 310ff.

²²⁵ See Halpern (n224) 192-6 for an overview of the development of the patent statutes in the USA; Bobbit R *Universities, Faculty, and the Battle over Intellectual Property. Who Owns What’s Inside the Professor’s Head?* (2006)14-17.

²²⁶ See further Monotti & Ricketson (n9) 150 n58. For an example of the difficulty in deciding whether a matter is one of federal or state law, see *DDB Technologies LLC v MLB Advanced Media LP* 517 F 3d 1284 (Fed Cir 2008) in which it was decided that while state law governs the interpretation of a contract, the determination of whether the employment contract could be interpreted to mean that the patents were automatically assigned, was a federal matter.

employee-inventions.²²⁷ Ownership of inventions, both generally and as regards employee-inventions, is largely left to the states to regulate. Save for a small number of states which have introduced statutory provisions, the common law of the various states regulates entitlement. Although this means that there is no single authoritative rule regulating entitlement to inventions for the country, a fairly consistent body of law can be seen as states rely on the same Supreme Court decisions.²²⁸ In practical terms, contract plays a significant role in the regulation of allocation.²²⁹

This examination of the USA approach focuses on the federal approach which does not provide for specific entitlement provisions for employees, and the reliance on the common-law jurisprudence that has emerged from the states. A reason for this may lie in the wording of the Constitution which may be strictly interpreted to keep ownership with inventors. The state-specific statutory interventions will not be examined individually. In addition, the focus is on employee-inventions which do not attract statutory regulation related to public sector employees or federally-funded research, such as the Bayh-Dole Act.²³⁰

5.3.2 Entitlement to Patentable Employee-Inventions

5.3.2.1 Basis for ownership and attribution

Section 101 of 35 USC provides that '[w]hoever invents or discovers any new and useful process, machine, manufacture or composition of matter, or any new and

²²⁷ See also Witte R & Gutttag E 'Employee inventions' (1989) 71 *Journal of Patent & Trademark Off Society* 467-9.

²²⁸ See van Slyke P & Friedman M 'Employer's rights to inventions and patents of its officers, directors and employees' (1990) 18 *AIPLA QJ* 127 131; Takenaka T & Reboul Y 'Employee invention system: Comparative law perspective' in Takenaka T (ed) *Intellectual Property in Common Law and Civil Law* (2013) 371-2; Witte & Gutttag (n227) 467. See also s397 of the Restatement (Second) of Agency.

²²⁹ On the historical development of the use of contract to shape the allocation of ownership of inventions, see Fisk C *Working Knowledge Employee Innovation and the Rise of Corporate Intellectual Property 1800-1930* (2009) and in particular Part II.

²³⁰ Patent and Trademark Law Amendment Act of 1980 35 USC ss200-211 (2001).

useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title'. An application for a patent must 'be made, or authorized to be made, by the inventor, except as otherwise provided in this title, in writing to the Director'.²³¹

Until 2013, section 101 was implemented by a 'first-person-to-invent' system which generally recognised the first-and-true inventor as the person entitled to the patent. This approach – which was at odds with the first-to-file approach to which other patenting nations had gravitated – changed with the enactment of the Leahy-Smith America Invents Act ('AIA') on 6 September 2011, which along with various amendments to 35 USC, introduced a 'first-to-file' approach from 16 March 2013.²³² The adherence to the first-and-true inventor approach for so long may be ascribed to the interpretation of article 1, clause 8 of the US Constitution as limiting rights to the first-and-true inventor.²³³ The possibility of future challenges to the constitutionality of the new first-to-file provisions has already been raised based on the ground that the reference to 'inventors' in the Constitution is to the first-and-true inventor, and not the first person to file for the patent.²³⁴ This shift was accompanied by various amendments necessary for a coherent implementation, including the amendment of the grace period for filing.²³⁵ Because pending applications made before 16 March 2013 are dealt under the old system, I shall refer to both the pre- and post-AIA law.

Under the pre-AIA legislation, an application for a patent could only be made by the person who had first invented it and had to be accompanied by an oath²³⁶ by the

²³¹ 35 USC s 111(a).

²³² The Act is also referred to as the Patent Reform Act of 2011. For more on the move to the first-to-file approach, see Machado C 'First-to-file and first-to-invent: An American historical perspective' 8 January *Journal of Intellectual Property Law and Practice* 1.

²³³ See, for example, Collins B 'The significance of inventorship determinations for foreign and domestic inventors' (1979) 7 *APLA QJ* 125.

²³⁴ See *Madstad Engineering Inc v USPTO* 756 F 3d 1366 (Fed Cir 2014) 1371ff although the matter was dismissed for lack of jurisdiction.

²³⁵ See further Takenaka T & Adelman M 'First-inventor-to-file under the America Invents Act: A View of First-to-file lawyer and a View of First-to-invent lawyer' in Takenaka T (ed) *Intellectual Property in Common Law and Civil Law* (2013) 50-74.

²³⁶ 35USC s111(3).

applicant that he or she believed him- or herself to be 'the original and first inventor'.²³⁷ The only basis for someone other than the first inventor to apply for the patent was pre-AIA section 118 which allowed a person to whom the inventor had assigned or agreed to assign the invention, or who had a sufficient proprietary interest in the patent, to make the application 'on behalf of and as agent for the inventor'.²³⁸ This was only relevant where the inventor refused to apply for the patent, or could not be found or reached after a diligent effort. The applicant had also to show that the action was necessary to preserve the parties' rights or to prevent irreparable damage.²³⁹

The effect of the pre-AIA position was that the patent was issued to the inventor and not the applicant. An assignee could not apply for a patent on the invention but had only an equitable claim against the inventor until the patent had been transferred. The same applied to employee-inventions. Even if there had been an assignment of the invention to the employer, the employee as inventor had to make the application.

Currently, an application made under 35 USC 111²⁴⁰ need not be made by the inventor, and non-inventors who fall within section 118 are entitled to apply for the patent.²⁴¹ The application must, however, include the name of the inventor.²⁴² Section 118 provides that '[a] person to whom the inventor has assigned or is under an obligation to assign the invention may make an application for patent'.²⁴³

5.3.2.2 Allocation of ownership of employee-inventions

²³⁷ 35 USC s115 (pre-AIA).

²³⁸ If the inventor was dead, insane, or legally incapacitated the relevant representative could apply.

²³⁹ 35 USC s118 (pre-AIA).

²⁴⁰ They also apply to US national-phase applications based on PCT applications filed under 35 USC s363.

²⁴¹ See Takenaka & Reboul (n228) 369.

²⁴² 35 USC s115(a). See further USC s115(b)-(d).

²⁴³ See further the USPTO rules implementing this provision 37 CFR § 1.42, 37 CFR § 1.46. Further 'A person who otherwise shows sufficient proprietary interest in the matter may make an application for patent on behalf of and as agent for the inventor on proof of the pertinent facts and a showing that such action is appropriate to preserve the rights of the parties'.

5.3.2.2.1 General

Inventorship is the key determinant of entitlement to the patent.²⁴⁴ In the employment context, too, the statutory provisions above apply. If the employee is the inventor, he or she has the right to apply for the patent unless the invention has been assigned to the employer, or there is an obligation to assign it, in which case the employer may make the application in its own name. The only alternative is for the employer to rely on inventorship as the basis for its claim.

Therefore, under 35 USC there are three bases on which employer may apply for a patent for an invention made by its employee: inventorship; an assignment from the employee-inventor; and an obligation by the employee-inventor to assign the invention. These are discussed next.

5.3.2.2.2 Entitlement through inventorship

The grant of the patent is for an invention as defined. The statute provides that use of the term ‘invention’ ‘means invention or discovery’,²⁴⁵ and that ‘claimed invention’ means ‘the subject matter defined by a claim or an application for a patent’.²⁴⁶ The reference to a ‘claimed invention’ was introduced by the AIA. This, along with section 112 which provides that the specification must conclude with ‘one or more claims particularly pointing out and distinctly claiming the subject matter’ which is regarded as the invention, indicates that resort must be had to the claims to identify the invention for the purposes of entitlement.²⁴⁷

²⁴⁴ See *Board of Trustees of the Leland Stanford Junior University v Roche Molecular Systems* 67 USPQ 2d 1252 (Fed Cir 2003) – the Supreme Court held that even in the case of federally-funded IP there is no automatic assignment from the employee. See also Carson M ‘United States: Board of Trustees of the Leland Stanford Junior University v Roche Molecular Systems inc’ (2010) 32 *EIPR* N11.

²⁴⁵ 35 USC s100(a).

²⁴⁶ 35 USC s100(j).

²⁴⁷ Pre-AIA see McManus J *Intellectual Property: from creation to commercialisation. A practical guide for innovators and researchers* (2012) 124-5; Monotti & Ricketson (n9) 151; Collins (n233) 122. Where infringement is concerned, however, the determination of the invention may use various levels of abstraction to determine the scope of the monopoly which, in turn, may result in a broader

Before the move to a first-to-file system, inventorship disputes entailed two enquiries:²⁴⁸ whether a person qualified as an inventor; and whether such an inventor had invented first in time. Inventorship required both conception and reduction to practice. The latter was necessary to determine exactly when the invention had been made in order to support a claim of first inventorship.²⁴⁹ Reduction to practice could be ‘constructive’ through disclosure in the patent application, or ‘actual’ as evinced by the inventor implementing the invention practically, for example by building a prototype. The inventor need not actually carry out the reduction to practice him- or herself.²⁵⁰ With the shift to the first-to-file system, proof of reduction to practice has been replaced by the act of filing for the patent.²⁵¹ Conception, however, remains relevant.

Before the AIA, 35 USC did not define ‘inventor’. Now, ‘inventor’ is defined as ‘the individual, or if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention’.²⁵² It is submitted that the use of the term ‘individual’ means that a juristic person does not qualify as an inventor. This

understanding of what constitutes the invention in this context. See Fellmeth A ‘Conception and misconception in joint inventorship’ (2012) 2 *NYU Journal of Intellectual Property and Entertainment Law* 73 83-9,126-8; Chiang T ‘The levels of abstraction problem in patent law’ (2011) 105 *Northwestern University Law Review* 1097.

²⁴⁸ Interference proceedings could be declared under 35 USC s135 (pre-AIA) to establish the first inventor. See further Monheit R ‘The importance of correct inventorship’ (1999) 7 *Journal of Intellectual Property Law* 191ff on concerns that arose.

²⁴⁹ See *Board of Education ex re Board of Trustees of Florida State University v American Bioscience Inc* 67 USPQ 2d 1252 (Fed Cir 2003) for a discussion of the principles of inventorship. See further McManus (n247) 107; Monotti & Ricketson (n9) 51; Gudmestad (n132)187-90 and the cases he cites.

²⁵⁰ On actual and constructive reduction to practice, see Halpern et al (n224) 206; McManus (n247) 107.

²⁵¹ Although much of the debate is likely to be of little relevance to future applications, there are matters which, as a result of the transition period, remain to be resolved under the previous law, for example, *Sanofi-Aventis v Pfizer Inc* 12-1345 (Fed Cir Nov 5, 2013).

²⁵² 35 USC s100(f). A ‘joint inventor’ or a ‘co-inventor’ is ‘any 1 of the individuals collectively who invented or discovered the subject matter of the invention’ 35 USC s100(g). On the concerns of acknowledging multiple contributions, see further Dreyfuss R ‘Collaborative research: Conflicts on authorship, ownership, and accountability’ (2000) 53 *Vanderbilt Law Review* 1219.

eliminates any possibility of the employer claiming title through inventorship.²⁵³ Under the pre-AIA approach, even in the absence of a similar statutory provision, the same approach was followed.²⁵⁴ There is no indication in the case law of employers being regarded as inventors.²⁵⁵ While the shift to the first-to-apply system may have been driven by corporate interests,²⁵⁶ this has not extended to the possibility of corporate inventorship.

In light of the above, the current approach to determining inventorship is that it inheres in the person who has conceived of the subject matter of the patent²⁵⁷ in line with pre-AIA case law.²⁵⁸ There is no standard ‘test’, but conception has been variously described as:

- * the ‘formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice’,²⁵⁹ and
- * ‘the complete performance of the mental part of the inventive act’ and ‘the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice’.²⁶⁰

²⁵³ Cherensky argues that corporate inventorship would be a possibility if ownership of inventions were justified in terms of a ‘personhood’ theory. See Cherensky S ‘A penny for their thoughts: Employee-inventors, preinvention assignment agreements, and personhood’ (1993) 81 *California Law Review* 595 646.

²⁵⁴ See further Takenaka & Reboul (n228) 370.

²⁵⁵ Simmons J ‘Inventions made for hire’ (2012) 2 *NYU Journal of Intellectual Property and Entertainment law* 1-42.

²⁵⁶ See Machado (n232).

²⁵⁷ See further Monheit (n248) 192. See also Greive E ‘The doctrine of inventorship: Its ramifications in patent law’ (1965-66) 17 *Western Reserve Law Review* 1342 1343- 51 for a discussion of the determination of inventorship specifically in the employment context.

²⁵⁸ See also the USPTO ‘Manual of Patent Examining Procedure’ (2010) which provides limited guidance by drawing attention to the approach in selected case law.

²⁵⁹ *Hybritech Inc v Monoclonal Antibodies Inc* F 2d 1367, 1376, 231 USPQ 81, 87 (Fed Cir 1986).

²⁶⁰ *Townsend v Smith* 36 F 2d 292, 295 4 USPQ 269, 271 (CCPA 1930). As to what would denote a sufficiently definite and permanent idea, an indicator would be when ‘only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation’

It is clear that inventorship is limited to the intellectual contribution and not the contribution of resources which may be necessary for the development of the invention. As a contributor of resources, the employer will therefore not be recognised as an inventor, even if the hurdle created by the reference to ‘individual’ in the definition could be overcome.

5.3.2.2.3 *Entitlement through assignment*

Since the enactment of the AIA, section 118 recognises the right of a non-inventor to apply for a patent where the invention has been assigned to him or her. In the employment context, the employer can acquire the right to apply for the patent through an assignment of the invention from the employee-inventor. The agreement to assign may be a term in the employment contract or a separate contract. There is no limitation on the form agreements to assign may take. The parties may agree to an assignment either before or after the invention has been made. In the former instance, the invention is assigned when it comes into being.²⁶¹ These pre-invention assignment agreements are a common way for employers to assert title to their employees’ inventions and it has been observed that inventive employees are almost inevitably bound by such agreements.²⁶² Since there are no federal rules limiting or

Burroughs Wellcome Co v Barr Labs Inc 40 F 3d 1223, 1228 (Fed Cir 1994) and *Monheit* (n248) 194-5.

²⁶¹ See Takenaka & Reboul (n228) 369; Caldwell P ‘Employment agreements for the inventing worker: A proposal for reforming trailer clause enforceability guidelines’ (2006) 13 *Journal of Intellectual Property Law* 284-92.

²⁶² For a detailed analysis of pre-invention assignments of employee-inventions see Cherensky (n253) 617-24. See also Urey D ‘Inventors in the United States’ in American Bar Association ‘Sorting out the Ownership Rights in Intellectual Property: A Guide to Practical Counseling [sic] and Legal Representation’ Monograph of the Patent, Trademark and Copyright Law Section (1980) 19 that ‘various surveys indicate that over ninety percent of the employed exempt personnel in corporations have signed employment agreements requiring the assignment of inventions’; Kamprath R ‘Patent reversion: An employee-inventor’s second bite at the apple’ (2012) 3 *Chicago Kent Journal of Intellectual Property* 190; Bobbit (n225) 40; Merges R ‘The law and economics of employee inventions’ (1999) Fall *Harvard Journal of Law and Technology* 7; Dreyfuss (n252) 1212. See also Dratler J ‘Incentives for people: The forgotten purpose of the patent system’ (1979) 16 *Harvard Journal on Legislation* 141.

prohibiting pre-invention assignments, the validity of the agreement depends on whether the term offends the state common law. In principle, there are no restrictions on what can be included in the contract and courts tend to enforce these agreements.²⁶³

The concern with pre-invention assignments of employee-inventions is that an inequality in bargaining power may result in the employee contracting on unfavourable terms. Although, overbroad agreements may be limited,²⁶⁴ it is usually only in the most extreme cases that these contracts are not upheld.²⁶⁵ In order to protect employees, some states have enacted legislation to regulate which inventions the employer can require the employee to assign in an employment contract.²⁶⁶

5.3.2.2.4 *Entitlement through an obligation to assign*

(a) General

Under section 118, a non-inventor is entitled to apply for a patent if the inventor is under an obligation to assign the invention to such applicant. The federal statute has no rules imposing such an obligation on the employee, and the general rule under

²⁶³ See *Teets v Chromalloy Gas Turbine Corp* 83 F 3d 403 (Fed Cir 1996) 407: 'contract law allows individuals to freely structure their transactions and employee relationships. An employee may thus freely consent by contract to assign all rights in inventive ideas to the employer'.

²⁶⁴ See *Takenaka & Reboul* (n228) 373.

²⁶⁵ Lo V 'Employee inventions and works for hire in Japan: A comparative study against the U.S., Chinese, and German systems' (2002) 16 *Temple International and Comparative Law Journal* 292; Cherensky (n253) 618-9, 621-3 for a discussion on unconscionability of pre-invention assignments.

²⁶⁶ The states include Delaware, Kansas, Utah, Illinois, California, Minnesota, North Carolina, Washington and Nevada. For further discussion of state legislation aimed at curtailing assignment agreements, see Gullette R 'Employer-employee Rights' in *American Bar Association* (n262) 33-41; Witte & Gutttag (n227) 468; Lo (n265) 293; Stim R *Patent, Copyright and Trademark: An Intellectual Property Desk Reference* 11ed (2010) 116; Cherensky (n253) 619; Merges (n262) 8. See also Coolley R 'Recent changes in employee ownership laws: Employers may not own their inventions and confidential information' (1985-1986) 41 *Business Law* 61-75 in which he discusses the state statutes for Minnesota, California, Washington, North Carolina, and Illinois.

common law is that the employee owns all inventions he or she has made.²⁶⁷ However, in the context of an employment relationship, an implied obligation to assign in favour of the employer has been recognised in at least two situations,²⁶⁸ namely where the employee has been 'hired-to-invent'; or where he or she has a special obligation to act in the interests of the employer.

(b) Employee hired to invent

The common-law 'hired-to-invent' rule imposes an obligation on the inventor to assign title to the employer where the employee has been hired specifically to make inventions.²⁶⁹ The reason for the obligation to assign the invention is simply that the employee has been paid to produce the specific invention through his or her salary or agreed compensation.²⁷⁰ Since the courts start from the position that the employee owns any invention he or she makes, it is incumbent on the employer to show that the invention was in fulfilment of an agreement under which the employee was 'hired to invent'. Indeed, employees may be hired to: '(1) invent a specific thing, (2) generally exercise his inventive skills, or (3) not invent at all'.²⁷¹

²⁶⁷ See *Teets* (n263). For more on the development of employee inventive activity in the nineteenth century, see Fisk C 'Removing the "Fuel of Interest" from the "Fire of Genius": Law and the employee-inventor, 1830-1930' (1998) 65 *University of Chicago Law Review* 1127; Simmons (n255) 27-30; Takenaka & Reboul (n228) 269.

²⁶⁸ See Chisum et al *Principles of Patent Law* 2ed (2001) 488; Teare A 'A discussion of one phase of the patent law dealing with the relationship of employer and employee in patent matters' (1923) 7 *Marquette Law Review* 206-07; van Slyke (n228) 132-3; Johnson E 'Patent rights of employer and employee' (1933) 17 *Marquette Law Review* 224. For more on the general common-law approach see Clark L 'Rights of employees to their inventions' (1962) 22 *Monthly Labour Review* 12-13.

²⁶⁹ For more on the hired-to-invent doctrine see Domagala D 'Employee suggestion plans: Building a better mousetrap or the misappropriation of ideas?' (1997) 31 *Suffolk University Law Review* 401; Schwab A 'The people aspects of innovation: Analysis of the relationships between US business entities and their employee and non-employee innovators and inventors' (1989) 15 *Canada-United States Law Journal* 245; Simmons (n255) 15; Takenaka & Reboul (n228) 371.

²⁷⁰ See *United States v Dubilier Condensor Corp* 289 US 178, 187 (1933) 187; *Standard Parts Co v Peck* 264 US 52 (1924) 59; *Houghton v United States* 23 F 2d 386 (4th Cir 1928) 388-9 all of which are of the view that an inventive employee is paid to be inventive.

²⁷¹ *Coolley* (n266) 58.

The mere fact that an employee invents something related to the employer's business and does so while on duty, does not of itself entitle the employer to an assignment.²⁷² Whether or not a 'hired-to-invent' situation arises, depends on the nature of the agreement at the time when the invention was made, regardless of whether or not it is expressly stipulated in a contract.²⁷³ Coolley consequently explains:

'an employee hired to exercise his inventive skills generally is hired to pursue his creative instincts, even if diverse from his assigned work; his employer anticipates no specific result or invention. This employee does not implicitly agree to assign any resulting patents to his employer, although some courts infer an agreement to assign patents arising from the inventor's work'.²⁷⁴

In this case, the common law would not imply an obligation to assign the invention.

The test has been variously formulated by the courts. In *Teets v Chromalloy Gas Turbine Corp*,²⁷⁵ for example, it was contested that there was an agreement that the employee-inventor, Teets, would assign rights in the invention of process used in the manufacture of aircraft turbine engine fan blades, to his employer, Chromalloy. The court explained that

'contract law allows individuals to freely structure their transactions and employee relationships. An employee may thus freely consent by contract to assign all rights in inventive ideas to the employer. Without such an express assignment, employers may still claim an employee's inventive works where the employer specifically hires or directs the employee to exercise inventive faculties'.²⁷⁶

The facts, which supported a finding in favour of the employer, were that although there was no contract dealing with the allocation of rights to inventions made by the employee, Teets had been specifically assigned to the project as chief engineer and had spent 70 per cent of his time working towards a solution to the problem the employer needed to solve for its client. Chromalloy had also not only paid Teets for

²⁷² *Dubilier Condensor* (n270) 89.

²⁷³ See *Stim* (n266) 63 and *Standard Parts Co v Peck* (n270) 59.

²⁷⁴ *Coolley* (n266) 59.

²⁷⁵ *Teets* (n263).

²⁷⁶ *Id* 407.

his efforts but also paid for the development of the invention and the patent protection.²⁷⁷

In *Solomons v United States*,²⁷⁸ one of the earliest employee-invention cases, the Supreme Court noted that the general rule that the inventor is the owner is subject to the limitation that

‘[i]f one is employed to devise or perfect an instrument, or a means for accomplishing a prescribed result, he cannot, after successfully accomplishing the work for which he was employed, plead title thereto as against his employer. Whatever rights as an individual he may have had in and to his inventive powers, and that which they are able to accomplish, he has sold in advance to his employer’.²⁷⁹

Similarly, in *United States v Dubilier Condensor Corp* the Supreme Court held that

‘[o]ne employed to make an invention, who succeeds, during his term of service, in accomplishing that task, is bound to assign to his employer any patent obtained. The reason is that he has only produced that which he was employed to invent’.²⁸⁰

In *Houghton v United States* the employee argued that the rule did not apply because he had not been employed as an inventor or to invent the particular invention but that his duties were more general.²⁸¹ However, the court was of the opinion that the proper construction of whether or not the employee was employed to invent, was not determined solely with reference to the original terms of the contract. Rather it was the nature of the work which the employee was engaged in at the time of the invention which is relevant to whether an obligation to assign the invention arose.²⁸² According to the court, this was because ‘[d]uring the period that he is so engaged, he is “employed to invent,” and the results of his efforts at invention belong to his employer in the same way as would be the product of his efforts in any other direction’.²⁸³

²⁷⁷ Id 408.

²⁷⁸ 137 US 342 (1890).

²⁷⁹ Id 346.

²⁸⁰ *Dubilier Condensor* (n270) 178, 187.

²⁸¹ 23 F 2d 386 (4th Cir 1928) 390.

²⁸² Ibid.

²⁸² Ibid.

²⁸³ Ibid.

Ultimately, the existence of an obligation to assign under the hired-to-invent doctrine is limited to situations where the employee has a duty to engage in inventive activity. It would be unusual for an employer to engage the services of an employee to undertake inventive activities for remuneration without having an interest in the product of the inventive labour.

(c) Fiduciary-type duty to assign

Under the common law an obligation to assign an invention to the employer may be implied as a consequence of the position the employee holds in the company, often as an ‘alter ego’ of the employer.²⁸⁴ An example is where the employee is in a fiduciary position that imposes obligations of trust and confidence.²⁸⁵ Whether or not such an obligation can be implied in the relationship depends on the facts.²⁸⁶

5.3.2.3 Attribution

The requirement that the name of the inventor be included in the application applies equally to employee-inventions. The situation before the AIA, therefore, stands in that ‘there is no way that an employer can suppress attribution’.²⁸⁷

5.3.2.4 Employers’ rights in employee-owned inventions: Shop rights

Even though the employer may have contributed to the development of the invention through the provision of resources, the criterion of inventorship for first ownership means that any other contribution, for example resources, will not be recognised. Further, in the absence of the hired-to-invent doctrine or an express assignment, the invention belongs to the employee and the employer has no title to it. The inequity which is perceived to result from this lack of recognition of the resource contribution,

²⁸⁴ See, for example, *Dowse v Federal Rubber Co* 43 F 308 (ND Ill 1918).

²⁸⁵ See further van Slyke (n228) 150-1.

²⁸⁶ See *Kennedy v Wright* 676 F Supp 888 (CD Ill 1988) 893. See further Domagala (n269) 400.

²⁸⁷ Dreyfuss (n252) 2000.

has resulted in many states acknowledging the employer's interest in the invention through a common-law 'shop rights' rule.²⁸⁸ Although shop rights manifest primarily in the employment situation, it is a general equitable doctrine that recognises the contributions of parties whenever an invention is made and is thus not limited to patentable inventions.²⁸⁹

In the employee-invention context, a shop right has been described by the courts as 'a right that is created at common law, when the circumstances demand it, under principles of equity and fairness, entitling an employer to use without charge an invention patented by one or more of its employees without liability for infringement'.²⁹⁰ Its purpose 'is to compensate the employer for the resources and/or employee work time which have been utilized in making the invention'.²⁹¹

As a common-law doctrine, it has developed through the cases and it is impossible to extract a precise set of factors which would warrant a shop right in every situation.²⁹² It is in effect, a right to use the invention in the absence of ownership or permission from the inventor. Shop rights are not automatically implied into employment contracts; the employer must establish the existence of such right under the particular state law.²⁹³

There is also no single legal basis for shop rights,²⁹⁴ although they tend to be regarded as a form of licence²⁹⁵ or estoppel.²⁹⁶ In relation to the characterisation as a

²⁸⁸ Some states, California for example, have enacted specific provisions on employee-inventions, which in certain cases include a statutory form of a shop right. For more on shop right generally, see Anawalt (n266) 8-49; Bobbit (n225) 45-6; for an historical analysis of the development of the shop right doctrine see Fisk (n267) 1142-64; Bishop A 'Employers, employees and inventions' (1957-8) 31 *S. California Law Review* 44.

²⁸⁹ It is not limited to the employment context. See *McElmurry v Arkansas Power and Light Co* 995 F 2d 1576 (Fed Cir 1993) 1583 n15; van Slyke (n228) 147-51; Simmons (n255) 30.

²⁹⁰ *McElmurry* (n289) 1580. See also Chisum et al (n268) 488.

²⁹¹ Witte & Gutttag (n227) 470-1.

²⁹² See, for example, Orkin N 'The Legal Rights of the Employed Inventor in the United States: a Labor-Management Perspective' in Phillips 1981 (n1) 154.

²⁹³ Coolley (n266) 59.

²⁹⁴ See Domagala (n269) 402-03 and the cases therein.

²⁹⁵ For example *McElmurry* (n289) 1580-1; *McClurg v Kingsland* 42 US 202 (1843) 205-06.

licence, Merges notes that this may have arisen because '[i]n the earlier shop right cases, the inventor often appeared to acquiesce in the employer's use of the invention, giving the arrangement the air of an implied license'.²⁹⁷ However, it is not so that there any implied authority is necessary for a shop right to subsist. In the case of estoppel 'the emphasis is whether the employee's actions, such as consenting to employer use, require he or she be estopped from asserting the patent right against the employer'.²⁹⁸ Regardless of legal characterisation, a number of recurring features can be discerned. The right is personal to the employer and the employer may not license or assign it to a third party – although shop rights have been held to be transferrable with the sale of a business.²⁹⁹ The employee, on the other hand, is free to license the invention to another party.

The genesis of the doctrine, it has been suggested, lies in *McClurg v Kingsland*.³⁰⁰ Harley invented a way of casting rollers and cylinders³⁰¹ while employed by Kingsland. He received weekly wages which were increased subsequent to his invention 'on account of the useful result'.³⁰² The invention arose from a number of experiments, all conducted in the employer's foundry and entirely at its expense. Harley suggested to Kingsland that it apply for a patent on the invention and buy his rights to the invention. Kingsland declined but continued to use the invention. During this time, Harley claimed no compensation, nor did he indicate that Kingsland not

²⁹⁶ See, for example, *Wommack v Durham Pecan Co* 715 F 2d 962 (5th Cir 1983) 966; *Gill v United States* 160 US 426 (1896); *McElmurry* (n289) 1580-1 (footnotes omitted).

²⁹⁷ Merges R *Patent Law and Policy* (1997) 1221.

²⁹⁸ Thomas J 'Who owns the invention?: The rights of employers, employees, and contractors' (1999) 62 *Texas Bar Journal* 1000.

²⁹⁹ See, for example, *Wommack* (n296) 964. In some instances it appears that where business has been transferred in its entirety, courts have been willing to allow the successor in title to exercise the shop right. Examples are *McKinnon Chain Co v American Chain Co Inc* MD Pa 1919; *Neon Signal Devices Inc v Alpha Claude Neon Corp* WD Pa 1932; *California Eastern Laboratories Inc v Gould* 896 F 2d 400 (9th Cir 1990) 402. See also Merges (n297) 1221 and Dreyfuss (n252) 1161.

³⁰⁰ 42 US 202 (1843). For a detailed account of the legal effect of *McClurg* see Fisk (n267) 1143-50; Simmons (n255) 30-2; and Neumeyer (n62) 707-08.

³⁰¹ *McClurg* (n300) 204.

³⁰² *Id* 205.

use the invention. After he had left the company, Kingsland continued to use the invention and Harley sued for infringement.

The Supreme Court of Appeal upheld the decision of the court *a quo* which had found that the facts justified 'the presumption of a license, a special privilege, or grant to the defendants to use the invention'.³⁰³

The approach in *McGlurg* was followed in *Solomons v United States*.³⁰⁴ While employed as Chief of the Bureau of Engraving and Printing, the inventor, Clark, invented a self-cancelling stamp for which he sought a patent. He subsequently assigned his rights to another party. The Supreme Court regarded the facts in *Solomons* as analogous to those in *McGlurg*.³⁰⁵ Here the inventor was employed when he made the stamp, his research was funded wholly by the employer and he used its machinery to craft the stamp. The employer sought his advice as to which stamp to use and were informed by him that he would not charge if his stamp was adopted.³⁰⁶

Possibly the most influential case on the scope of the shop right has been *United States v Dubilier Condensor Corp.*³⁰⁷ The employees, Dunmore and Lowell, were employed in the radio section of the United States Bureau of Standards where they were engaged in research and testing. During this time they conceived of a number of inventions. They applied for and were granted three patents, which they licensed to Dubilier. The US government claimed ownership on the basis of the employment relationship with the inventors. The Supreme Court, however, found that the employees had not been employed specifically to invent and rejected the claim.

Nevertheless, it found that the government was entitled to use the inventions without payment of royalties on the basis that

³⁰³ Id 205-06.

³⁰⁴ 137 US 342 (1890).

³⁰⁵ Id 347-8.

³⁰⁶ Id 348.

³⁰⁷ *Dubilier* (n270). Although this case dealt with government employees, its relevance is to the development of the shop right doctrine generally.

'[w]here a servant, during his hours of employment, working with his master's materials and appliances, conceives and perfects an invention for which he obtains a patent, he must accord his master a non-exclusive right to practice the invention'.³⁰⁸

In this case the employees had conceived of and perfected the invention in the course of their employment and were allowed to pursue their work in the government's laboratory.

The nature of the shop right doctrine is captured in *McElmurry v Arkansas Power and Light Co*³⁰⁹ where the US Court of Appeals for the Federal Circuit upheld the decision of the district court which had based its decision on *Dubilier*. In this matter, Arkansas Power and Light Company ('AP&L') had hired Bowman as a consultant.³¹⁰ AP&L was unhappy with an aspect of their precipitator hoppers, and so Bowman and an AP&L employee devised a new level detector system to resolve the problem. AP&L installed this new system in all its hoppers, covering all costs associated with the installation and testing of the level detector, as well as the materials and drawings.³¹¹

Bowman patented the invention and subsequently sued AP&L for infringement when it used a different contractor to install the technology. AP&L raised the defence of a shop right because Bowman had developed it at AP&L's facilities and at its expense. It claimed that it therefore had the right to reproduce and use the system in its business.³¹² The court found that it had to 'look to the totality of the circumstances on a case by case basis and determine whether the facts of a particular case demand, under principles of equity and fairness a finding that a 'shop right' exists'.³¹³

The court also noted that the fact that Bowman had conceived of the idea for the invention prior to his engagement as a consultant by AP&L, was irrelevant.³¹⁴ In

³⁰⁸ Id [20]. See further discussion on this case at Anawalt (n266) 49-50.

³⁰⁹ *McElmurry* (n289).

³¹⁰ *McElmurry* (n289).

³¹¹ Id 1579.

³¹² Ibid.

³¹³ Id 581-2.

³¹⁴ Id 1579, 1582 n14.

addition, the argument that there could be no shop right as Bowman was not an employee but a contractor at the time of the invention, was unsupported, and that in fact the law supported the contrary.³¹⁵

5.3.2.5 Concluding comments on the United States' approach

The USA's approach is restricted to the development of the common law at state level, with limited statutory intervention in certain states. At federal level, there is no specific statutory recognition of the effect of employment on patent allocation. The general approach is to recognise intellectual contributions to the development of the invention by limiting applications to individuals who conceived of the subject matter. Employer contributions in the form of resources are not recognised by statute, and until recently employers could not apply directly for a patent on an employee-invention. Although the USA system appears to favour employee-inventors by placing them in a position of control over the invention, in reality employers have significant opportunity to use the inventions.

Even under the archetypal approach which vests ownership in the inventor, the shop rights doctrine serves as a way to enable the employer to nonetheless use the invention in the absence of ownership. The doctrine has developed as an equitable doctrine to ensure a fair distribution of rights to an invention to which both parties have contributed. However, it is less appealing than ownership as an incentive for an employer to invest in the development of inventions because it offers limited scope for the employer to exploit it and gain commercial advantage from its use.³¹⁶ It is not a property right and its non-exclusivity means that the employer is not able to prevent the employee transferring the invention to anyone else.³¹⁷ Furthermore, the fact that it arises only in response to the particular factual situation, means that it is not possible to predict with absolute accuracy whether an employer's behaviour falls within the shop right.

³¹⁵ Id 1583 n15.

³¹⁶ See further Simmons (n255) 13.

³¹⁷ Id 14.

Although the hired-to-invent doctrine enables a more concrete deviation from the standard model, it too is plagued by the vagueness associated with relying on the common law. In this case, the determination of ownership depends on ‘whether the concept of employment is given a broad or narrow interpretation’.³¹⁸

Generally though, most deviations arise as a consequence of private agreements which oust the common-law or statutory inventorship approach.³¹⁹ Orkin notes that ‘[t]o all intents and purposes the common law has had little recent application for with the advent of corporate employers and technically trained employees the assignment contract has virtually superseded the common law rights determination’.³²⁰

From an incentive point of view, employers will invest in inventive activity if they are able to secure a return on their investment. Where this requires patent ownership, the employer must acquire title from the employee-inventor. As the function of a contractual arrangement, the assignment of the invention involves a process of negotiation between the parties as to the terms of the assignment. Given the prevalence of corporate-initiated inventive activity, the question arises as to why there has not been a push from the corporate sector for federal patent law to provide for a default employer-owner position when inventions are made by employees. The reason appears to lie in the perceived advantages of contract for both employees and employers. According to Witte and Guttag, the enactment of state or federal legislation ‘may interfere unnecessarily with the ability of employees and employers to develop contractual relationships which satisfy the interests and desires of both’.³²¹

Takenaka and Reboul are of the opinion that this inventor-recognition approach is a reflection of the US policy of promoting innovation through inventions. According to them,

‘[t]o preserve incentives to invent, US case law prevents employers from taking away property rights in the invention and secures inventor-employees bargaining opportunities with their employers for fair value of the invention. In other words, the

³¹⁸ Coolley (n266) 60.

³¹⁹ Cherensky (n253) 617.

³²⁰ Orkin (n292) 154.

³²¹ Witte & Guttag (n227) 471.

patent policy of innovation promotion through a reward to inventors is implemented through the bargaining between inventors and their employers over a transfer of property right in the invention [sic].³²²

Although it is argued that the employee-inventor holds the right to the invention as a bargaining chip, it has been observed that the reality is that ‘most IP rights in the US are continually and automatically allocated to employers’.³²³ From the employer-perspective, contract effectively brings about the desired deviation. For the employee, this unrestricted use of contract places them at a disadvantage if the effect of the employment relationship on the bargaining power of the parties is not tempered. There is a danger that the scope of the interests they assign to the employer and the benefit they derive from an assignment of the invention will not be fairly bargained for given that employees are usually in an inferior bargaining position.

This concern is very real especially when, as it has been noted, employers almost inevitably acquire title to a range of inventions simply as a ‘routine matter’.³²⁴ Concerns over pre-invention assignment agreements have led some states to introduce statutory provisions to protect employees from employers’ overreaching.³²⁵ Cherensky argues that a reason for the prevalence of pre-invention assignments is ‘that there is, in effect, no market for technical jobs that does not require relinquishment of preinvention rights’ and that as a result this ‘market failure has eviscerated the policy of individual incentive and recognition implicit in a Patent Code that recognizes only human inventors’.³²⁶ In addition, in so far as the common law provides for a rule that vests ownership in the employee, the hired-to-invent doctrine implies an obligation to assign the invention to the employer, even in the absence of an express agreement.

³²² Takenaka & Reboul (n228) 372.

³²³ Yanisky-Ravid, S ‘“For a Mess of Pottage”: Incentivizing Creative Employees through Improved Competitiveness’ (2013) 19 May *Cornell Law Review* 2.

³²⁴ Adelman M, Rader R, Thomas J & Wegner H *Cases and Materials on Patent Law* (1998) 1066; Gudmestad (n132) 186-7.

³²⁵ Cherensky (n253) 624.

³²⁶ Ibid.

In addition to the general concern about the scope of the rights which employers claim under contract, a further issue relates to the remuneration which the employee-inventor receives in exchange for parting with the invention. Where an employee-inventor assigns an invention to the employer, there is no obligation on the employer to pay the employee specifically for the assignment. It appears that the payment of a salary is sufficient and that any unhappiness with the remuneration ought to be resolved at the time the parties negotiate the terms of the employment contract.³²⁷ As Orkin notes, '[a]n individual's "employment" or "continuation of this employment" has been held by the American judicial system as adequate consideration to support a legally binding contract...Generally, courts regard the parties as having equal bargaining power and therefore uphold the contract'.³²⁸ Consequently, any claim by employee-inventors for payment related specifically to the invention, would in the main be limited to what was agreed to in the employment contract.

Merges justifies the current approach as the most effective one from an economic perspective. He argues that 'the overwhelming verdict from economic theory is that the law properly allows employers to take ownership of their employees' inventions',³²⁹ and that there are ways to compensate employees for inventions other than ownership – for example, reward programs and the 'possibility of leaving a firm with an inchoate concept, perhaps with venture capital backing, constitutes an important counterbalance to the rights of the employer firm'.³³⁰

There have been calls for a statutory compensation scheme, mostly to deal with the perceived concern that employees are not adequately compensated and hence also not incentivised, when employers acquire rights through contract. The arguments in support are usually that a monetary payment would encourage employees to create, especially where the employee's salary may not reflect the value of the inventions to

³²⁷ Takenaka & Reboul (n228) 373.

³²⁸ Orkin N 'Employee invention rights in the Twenty-First Century'(2005) 56 *Labor Law Journal* 85

³²⁹ Merges (n262) 3.

³³⁰ *Id* 3, 38-50.

the company;³³¹ that the employee should be rewarded for the extra work that has gone into making the invention; and that the employees should share in the profits derived from their intellectual work.³³²

However, while the US system is not averse to compensation schemes in general, and has recognised some in the public sphere in relation to certain groups of federal employees, there has not been sufficient support for the introduction of such schemes in the private sphere.³³³ This does not mean that there have not been attempts to introduce them.³³⁴ However, as Orkin has commented, proposed reforms of federal law to guarantee employed inventors remuneration for their endeavours, has ‘failed to become law, and most have suffered a quiet death after little effort was made to lobby for their enactment’ with only one bill actually being through a congressional hearing’.³³⁵

Arguments against compensation schemes include that they have an ‘anti-innovative impact’ and fail to factor in the contributions of other employees who do not meet the

³³¹ See, for example, Rossman, J ‘Rewards and incentives to employee-inventors’ (1963-1964) 7 *Patent, Trademark & Copyright Journal of Research Education* 431.

³³² Witte & Gutttag (n227) 472-3.

³³³ An examination of the US approach to publicly funded intellectual property is not part of this research.

³³⁴ Witte and Gutttag note that between 1963 and 1981, five bills have also been proposed in the US Congress to govern inventions made by employees. Two of the proposed bills (1981 Kastenmeier bill and 1961 Brown bill), like state legislation, would have controlled the employer’s ability to require invention assignment as a condition of employment. Three of the proposed bills (1981 Kastenmeier bill, 1974 Hart-Owens bill, and 1969 Moss bill), like West German law, would have obligated the employer to provide compensation for employee inventions made at work. All these bills shared the same fate: they were opposed by US industry and died in the respective Congressional committees. They were not actively supported by scientists and engineers. Witte & Gutttag (n227) 480; Lo (n265) 291, Takenaka & Reboul (n228) 374 esp n56; Johnson (n268) 224ff. See also Orkin N ‘The legal rights of the employed inventor: New approaches to old problems (Part II) (1974) *Journal of the Patent Office Society* (56) 719 at 736 in which he argues for legislation to introduce compensation.

³³⁵ Orkin (n292) 164 for details of each of the bills.

legal standard for inventorship.³³⁶ The difficulty in establishing a uniform practice for the country as a whole is also a factor.³³⁷

There have been other suggestions to alleviate the harshness of the current position. An example is patent reversion schemes in terms of which a patent will revert back to the inventors so that the employee can also reap the benefits of the invention.³³⁸ Orkin suggests that employees – notably engineers and scientists – should embark on ‘constructive’ strike action by continuing with their normal tasks but withholding their ideas from the employer.³³⁹ Bartow similarly calls for collective action which will have the effect of incentivising employees in the absence of a change in the law. She suggests that employees who would usually be forced to enter pre-invention assignments, refuse to do so.³⁴⁰

From this, it is clear that even in a system which until recently was steadfast in its recognition of the first-and-true inventor as the first patentee, the realities of the employee-invention paradigm have forced compromises – albeit not by statutory regulation – at federal level.

³³⁶ See Witte & Gutttag (n227) 473-4. For an indication of the view of corporates on ownership, see the US response to the AIPPI Q183 questionnaire by Fetterley D, Saffer J and Goldberg M ‘Report Q 183 in the name of the United States Group’ AIPPI reports 2004 available at <http://aippi.org/event/39th-world-intellectual-property-congress/> (date of use 30 November 2015).

³³⁷ Neumeyer (n62) 706.

³³⁸ For example, Kamprath (n262) 186ff.

³³⁹ Orkin (n328).

³⁴⁰ Bartow A ‘Inventors of the world, unite! A call for collective action by employee-inventors’ (1997) 37 *Santa Clara Law Review* 713.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The research question is: How South Africa ought to regulate the ownership of patentable inventions between employers and employees? A premise of this thesis is that the answer to this question is must align with the purpose of the patent system in South Africa. This requires that the recognition of particular persons as default right-holders furthers that purpose.

This chapter resolves the research question by recommending a reform of the PA 1978 to regulate potentially competing claims to the invention by employers and employees in a way that furthers the purpose of patents as tools to incentivise the individual contributions which are required to make a patentable invention.

The recommendation is the culmination of conclusions as to the suitability of the current South African system to regulate the ownership of patentable employee-inventions, the way in which the ownership of employee-made intellectual property is regulated in South Africa outside of the PA 1978, and the experiences of the UK and USA systems which offer the experiences of two divergent alternative responses to the current South African approach..

6.2 SOUTH AFRICA IN THE CONTEXT OF CHAPTER 2: A CONCEPTUAL BACKDROP TO THE CONCLUSIONS AND RECOMMENDATIONS

Chapter 2 was designed to establish a framework within which to consider the ownership of employee-inventions. It is within this framework that the employee-invention issue in South Africa must be approached. There are three aspects to its role as a guide for the conclusions which follow.

Firstly, Chapter 2 serves as a representation of the 'international' patent regime to which South Africa subscribes. As a signatory to the Paris Convention and a member of the WTO, South Africa is obliged to put in place a system of patents which meets the imperatives of these instruments. However, as explained in Chapter 2, a measure of flexibility in the implementation means that national systems vary. In some cases the instruments are explicit in their meaning and also in how they are to be received nationally. In other cases – for example as regards the nature of inventorship or first ownership in patents – they are either silent or open to differing interpretations.

Internationally, issues relating to ownership of employee-inventions are not harmonised. Neither the international intellectual property law instruments, nor the international labour fora, have ventured formally to recognise the shift in the patent paradigm that the employment relationship has necessitated. It is unlikely that this issue will be the subject of an instrument under either the international intellectual property or labour fora. This is evident from the current silence from the WIPO and the ILO on the matter. There are no international labour instruments which directly affect the implementation of patent laws, although they do direct labour law. Consequently, the implication of labour law in the allocation of ownership of patents occurs at national level. This means that, like other patenting nations, the development of an optimal framework will be directed by domestic drivers. However, in all instances the implementation must not conflict with the international imperatives, in particular the TRIPS Agreement.

Flowing from this, is the second aspect, namely to establish the type of first-ownership rule the international system anticipates or is able to sustain. It was established that inventorship is at the very least associated with the intellectual contribution of a natural person. A patent is granted in exchange for a new, inventive, and useful technological advancement. Juristic inventorship requires a strained interpretation to create a link with intellectual contribution. The system is not concerned with how that invention arose, or with who, other than the inventor, is necessary for a further invention. This means that the corporate is not recognised for

its resource investment, regardless of the investment being a *sine qua non* for the creation of the invention.

This affects how the international system can be interpreted to respond to first ownership. Inventorship as described, is the only evident touchstone for the grant of the patent, and hence, by deduction, for first ownership. The archetypal approach is that the inventor is the owner of the patent. However, this does not eliminate non-inventors from patent ownership and national systems can decide who to recognise. The reason for not doing so at international level relates to the purpose of patents as incentives for inventions which are only defined in terms of the intellectual input.

However, there is no regulation of the legal basis for vesting first ownership in a non-inventor. As a result, policy considerations outside of patent law may drive the inventor's divestment of ownership. It is at this juncture that labour law policy comes into play when the transfer is a consequence of an employment relationship between the employee-inventor and his or her employer. This plays out at national level.

Thirdly, Chapter 2 establishes two main premises upon which the thesis operates. These relate to the nature of modern inventorship and the construction of the patent system as an incentive mechanism. It is assumed that the inventions to which this thesis responds are of the types which are made in a corporate environment and would not arise without both a resource and an intellectual contribution. Furthermore, the intellectual contribution is made by inventors employed by firms which make the resource contribution. Where the allocation rule acts as a disincentive to a repeat contribution – it being admitted that it is impossible to determine whether a patent *per se* can be the *sine qua non* for an invention to be made – then the system is less likely to meet the incentive mission. So it is about ensuring that neither contributor refuses to repeat their performance, whether intellectual or resource-based, solely because of the allocation rule. This incentive function is given practical application through two mechanisms: the grant of an economic monopoly and attribution. For the patent system to act as an incentive to both employees and employers, it must allocate these benefits between the parties in a way that does not discourage further contributions.

The fourth aspect of Chapter 2 which bears on the conclusions on the South African system, is the set of assumptions as to the incentive effect of specific first-ownership

and attribution allocations on the willingness of employers and employees to commit their intellectual or resource contributions to the inventive activity. These were set out as a model framework in 2.5. In short, the incentive value of ownership of a patent and of attribution will vary depending on the circumstances under which the invention is made. This is particularly so in the employment context where ownership of a patent will not always be the best incentive for another invention under the same circumstances. An example is where the invention has been made using the employer's resources but does not fall within the employer's business interests. Not granting ownership of the patent will arguably not deter a similar employer-contribution provided the employer's costs are recouped or it derives some benefit through alternative means. Similarly, not granting an employee ownership in a patent for an invention which he or she has no interest in commercialising or controlling is not a disincentive to invent, provided that the employee is adequately rewarded through alternative means. It is assumed that the optimal default position is one which is most likely to encourage both employer and employee.

6.3 CONCLUSIONS

The following conclusions are drawn from Chapters 3, 4 and 5 and together, form the underlying basis for the recommended reform of the PA 1978.

a. There is sufficient basis to justify the patent system in South Africa as a tool for further innovation as part of the country's broader goal of economic growth. Consequently, the conceptualisation of the system as an incentive mechanism is not at odds with the assumption that the patent system aims at innovation. The underlying purpose of the system is to contribute to the production and application of inventive activity within the broader drive to encourage greater private sector investment in innovation. Consequently, amendments which seek to further this goal ought to be supported.

b. The patent system makes no specific provision for the allocation of rights to employee-inventions through an explicit first-ownership rule which deviates from the archetypal allocation. However, the legislature has recognised that in cases of

employee-made intellectual property in the context of copyright, designs, and plant breeders' rights, statutory provisions provide a way of recognising the particular context which employment creates and its effect on the ordinary first ownership rules which would tend to vest first ownership in the employee as the individual responsible for the creation. Similarly, in the case of the IPPFRD Act ownership of intellectual property - which includes patents - is subject to a statutory provision crafted to meet the needs of that legislation. Although these instruments vary in approach, the conclusion to be made here is that it would not be anathema for the PA 1978 to be amended to take account of employer-contributions.

c. There is precedent outside of South Africa for deviations from the archetypal approach which divert first ownership from the employee-inventor to the employer. The British system is an example of comprehensive legislative remodelling to accommodate employee-inventions. The US system, while relying on common-law developments, also offers examples of jurisdictions which have chosen to legislate the issue.

d. Attribution plays a role in the incentive function. Its value is independent of the commercial value of the patents to employee-inventors and irrespective of the commercial success of the patent. Attribution therefore serves an incentive function in the sense that even in the absence of an economic reward, there are benefits to be derived from association with a patented invention. However, the South African patent system does not provide for a clear right of the inventor to be mentioned although the identity of the inventor is an indispensable requirement for the successful registration of a patent and a patent can be revoked on the basis of incorrect inventorship.

Although this right is arguably subsidiary to the ownership of the patent, it has been recognised by workers in the ILO meetings as valuable even when ownership of the patent resides in the employer. The WIPO Model Laws also recognise attribution as something more than simply an administrative entry on the patent application. In the UK it has been bolstered by the provision that it may not be waived. The conclusion to be made is that even though the employer may not be able to claim attribution under the usual inventorship rules, it may create the situation where the employee is

unable to enjoy the benefits of attribution. This could arise where the employee agrees that he or she will not be mentioned as the inventor. Consequently, in so far as it is possible to entrench this benefit, at the very least it ought to be made unwaivable.

e. The PA 1978 recognises inventorship as the key determinant of first ownership but is silent on what inventorship entails; there is no definition of ‘inventor’ and, at best, an ‘invention’ is ‘defined’ in terms of patentability criteria. This corresponds to the international approach and to that of the foreign jurisdictions considered. It would be highly unorthodox to approach inventorship on the basis of anything other than its intellectual elements, for example a resource contribution.

f. Following on from the previous point is that the conclusion to be drawn is that the PA 1978, while not expressly excluding juristic persons from being inventors, nonetheless is more closely aligned with the conventional wisdom that limits inventorship to natural persons. This is because it would require a strained interpretation to credit the corporate-employer with the intellectual contribution in the absence of the inventor. Neither the UK nor the US approaches have suggested anything along these lines either.

g. Although juristic persons are excluded from first ownership on the basis of inventorship, PA 1978 recognises that non-inventors, including juristic persons, can be first grantees of the patent. It limits the right to apply for the patent to persons who have acquired the right from the inventor. This means is that non-inventors must acquire rights from inventors and therefore, employers can acquire rights to the patent from the employee-inventor.

h. The only basis for the employer to acquire the right to apply for the patent is through an assignment or rule of law as the basis for the acquisition of the rights from the employee-inventor. The patent system does not restrict the basis for the acquisition so that the legal relationship giving rise to the acquisition will almost invariably be subject to rules outside of the PA 1978.

i. The existence of an employment relationship draws labour laws into the equation. Where the relationship between the parties exhibits specific characteristics, it may attract the provisions of labour law aimed at mediating the unequal bargaining power generally attendant upon employment relationships where one party is economically dependent on the other on an ongoing basis. It is not possible to isolate the allocation of ownership in employee-inventions from the effects of the employment relationship on the parties' freedom to contract.

The PA 1978 while not providing for an *ex lege* allocation in favour of the employer, recognises that employers need to acquire title to inventions from their employees and that the basis for the acquisition is an assignment. However, it has introduced protective measures to limit the extent to which rights linked to an employment relationship can be assigned. In the absence of an explanation or definitions of any of the terms in section 59(2)(a) it is almost impossible to regard it as anything other than an attempt to impose labour law policy into the PA 1978. Labour laws developed as a countervailing force in response to the imbalance in power between employers and employees, which characterises work relationships in which one party is economically dependent on the other on an ongoing basis. Section 59(2) can be interpreted as an acknowledgment that reliance on the contract of employment to vest patent rights comes with an inherent risk that the employee needs to be protected from contracting on poor terms.

When one considers s59(2)(a) along with similar tendencies in the US and UK systems to impose statutory rules to protect employee-inventors from assigning inventions for inadequate remuneration, the conclusion is that reliance on common law rules to mitigate harshness and to restrict unconscionable contracts, is in the patent context, not ideal. In the US even though there are no rules at federal level and it is argued that contract in fact places the employee in the position to be able to negotiate, some States have introduced statutory rules to protect employees in similar situations. In the BPA 1977 the compensation provisions serve to ensure that employees are properly rewarded where they choose to divest themselves of ownership.

j. In circumstances where the employer has acquired the right to apply for the patent from the employee-inventor, whether or not the employee will be discouraged from inventing again is not a consequence of the patent allocation but of the private relationship between the employer and employee. In the absence of statutory provisions which direct benefits for his or her patentable inventions to the employee, the employee's reward for inventorship becomes a function of the employment contract. Therefore, whether the divestment results from an assignment or the operation of law, the employee's only monetary claim against the employer is for his or her negotiated salary. This may be formulated in various ways – for example, bonuses for patents – but it remains a function of the contractual arrangement between the parties.

The employer is consequently not obliged to offer the employee anything more than his or her regular salary for the invention. In this way, whether or not the patent system has succeeded as an individual incentive mechanism to encourage the employee to contribute again will be determined by whether or not the terms of the employment relationship are such that they elicit a further employee contribution. Even if the employee is not dissuaded from future inventing, his or her commitment to the inventorship enterprise is a consequence of the specific employment relationship and not of a default allocation under the patent system.

In the UK system provision is made for employees to claim compensation from employers who have been vested with ownership but only to the extent that the invention has resulted in an extraordinary benefit to the employer. For the most part, the employer's salary is regarded as sufficient remuneration for inventions. Although this is a very limited provision, it does provide a means of tempering any unfairness in the terms of the employment contract in so far as the amount of remuneration is concerned as it incorporates the benefit of hindsight. There is no way of being certain of the value of inventions which have yet to be made and consequently, the negotiation over salary will not be able to place an actual value on the invention. The very nature of patentable inventions is that they are novel and non-obvious – which means that they cannot actually be anticipated.

k. There is no patent-specific understanding of employment law and references to employment in the patent context require an interpretation aligned to the purpose for which it is sought. Employment may, therefore, be one aspect in determining whether or not the employer is entitled to the employee-invention, or it may serve to protect the employee from losing the invention to the employer. In the copyright, plant breeders' rights, and to some extent, the designs legislation, there are references to employment as the basis for the acquisition of rights by the employer. In the designs and patents legislation, employment features to a different end as well, namely to protect the employee from agreeing to pre-assign inventions unrelated to the employment relationship. In neither case, are any of the employment-related terms, for example, 'course of employment', 'course and scope of employment', 'contract of service' and the like, defined.

It is not possible to simply assume that guidance can be sought in 'labour law' generally. There is no single interpretation of employment-related terms which fits all cases. In fact, there is no single standardised 'labour law' that can be used in all contexts to resolve employment-related issues. For example, references to employment as a purely contractual construct are no longer definitive of the modern employment relationship and hence also the context in which inventions are made. It has been shown that in the context of the BCEA and the LRA for example, statutory regulation will be implied in work arrangements which do not necessarily conform to the contractual model. In addition, it is recognised that the employee's duties may change from what was expressly stipulated at the start of the employment contract based on what he or she actually does as part of the job. Consequently, references to statutory and common-law interpretations of employment-related terms must be cognisant of the context, in particular the policy considerations which inform the purpose of using an employment-related concept.

Under the British law the approach has been to introduce definitions into the patents legislation, albeit to incorporate labour statutes. In addition, it is accepted that the term 'normal duties' for example, requires an interpretation unique to the legislation and not one which relies on the common law employment law cases.

l. The PA 1978 does not recognise investment or any other, non-intellectual contribution. Furthermore, the Act does not provide for alternative forms of recognition other than ownership for the employer. In the US employers have recourse to the shop-right doctrine in many States. In that context though the basis for the doctrine is equity, not the incentivisation of inventive activity – shop rights do not only arise in the employee-invention context. It is compensatory in that it puts the employer in the position where it can recoup its resource contribution. However, as a non-exclusive right less than ownership, it has too many disadvantages to function as an incentive for the employer.

In South Africa the employer will likely be left to rely on unjustified enrichment to recoup its contribution.

m. As regards acquisition by operation of law, it is shown in Chapter 3 that in the absence of an implied statutory allocation, this is left to the common law. In South Africa it is not possible to state unequivocally whether there is an implied common-law rule on which the employer can rely to claim ownership of the employee-invention in the absence of an assignment. Furthermore, even if there is an implied rule, the dearth of clear judicial guidance makes it impossible to formulate the rule with any accuracy so as to anticipate the varied inventorship scenarios within the employment context. In many instances it appears that a tacit term is a more likely basis for employers to claim ownership in their employee-inventors' inventions. However, a tacit term in contract does not transfer rights and would only serve as the basis for a later assignment.

6.4 RECOMMENDATIONS

South Africa needs to acknowledge the employee-invention paradigm as the prevailing norm in the patent context by recognising that the contributions essential to the development of a patentable invention are not limited to individual intellectual effort. Technological innovation on a scale necessary to further the knowledge economy depends unequivocally on both investment by corporations and on the intellect contribution of individual inventors. It was shown in Chapter 3 that the current system which relies heavily on the common law to deviate from the default

position to pass ownership to the employer, does not align with the incentive function of patents. It is the PA 1978 be amended to resolve the concerns and to avoid the reliance on private ordering through the employment contract. The advantage of a statutory approach is that it can be crafted to respond to both the patent and labour policy concerns which must be taken into account. In this respect, the British approach is to be favoured over the US reliance on the common law.

The proposed new legislation is a response to the conclusions which have been drawn. The key principles underlying the recommendations are as follows.

Firstly, in cases where the incentive function is best served by vesting ownership in the employer, it is recommended that a first-ownership rule be used to vest ownership directly in the employer. This rule should be clear as to the circumstances under which the employee will not be the first owner of the invention.

Secondly, where it is necessary to use terminology commonly associated with employment in the patent context, care must be taken to ensure that the use aligns with the purpose of the patent system. Consequently, it should not be necessary to look outside of the system to define terms, unless specifically directed to do so. The use of terms which feature in multiple contexts with different underlying purposes, should be replaced with new terms devoid of such association, or should be accompanied by guidance on how they are to be interpreted. The British approach of including specific definitions to guide the interpretation of employment-related terms is recommended.

Thirdly, the current approach of limiting inventorship to natural persons who devised the inventive concept must be retained. Further the PA 1978 should include an express right for the inventor to be mentioned. Even though this may in practice amount to little more than the current situation of identifying the author on the specification, attribution plays a valuable incentive role for inventors who will not necessarily remain bound to a particular employer. This right must vest in the inventor regardless of whether the patent has been assigned.

Fourthly, where employees are not vested with default ownership, they should be adequately remunerated to ensure that the lack of ownership does not disincentivise a further intellectual contribution. It is not recommended that there be a general compensation clause in such instances but that any payment in addition to the salary must be linked to the incentive function. Here the role of the employment contract as a driver of inventive activity must be considered in light of the salary the employee has negotiated under the employment contract. This amount ought to cover the performance of duties from which an invention would be foreseeable. However, where the invention proves to be of greater worth than could have been anticipated when the contract was concluded, a 'top-up' payment should be obligatory. Since the invention is actually initiated by the employer in this context, it is not ownership which drives the inventor, but rather adequate compensation for the effort. In many instances, given the same circumstances, the employee would invent again without the prospect of ownership because his or her motivation is determined by the employment obligations set by the employer.

Finally, provision should be made to ensure that employee-inventors are able to bargain robustly with employers over inventions which do not fall under the default first-ownership rule. The aim should be to facilitate freedom of contract, and so it should not restrict either party's freedom to negotiate on terms which best suit it.

In conclusion, the PA 1978 should be amended by the addition of section 27A the deletion of section 59(2)(a), and the development of a set of Guidelines to assist in the application of the provision:

- 27(A)(1)
- (a) Where during the subsistence of an employment relationship, an invention arises as a consequence of the duties the employee is obliged to fulfil, and that invention is one which could have been expected to result from the employee's efforts, the rights in the invention vest in the employer.
 - (b) Where an invention belongs to the employer in terms of (a), the employee must receive a fair and reasonable remuneration based on

the value the employer derives or expects to derive from the invention for the duration of the patent.

(c) In the absence of agreement between the parties, either party may apply to the Commissioner of Patents or a court to determine whether the remuneration the employee is entitled to in (b), is fair and reasonable. Such application may be made at any time and more than once.

(d) The inventor has the right to be named as such in the patent. This right is not transferrable and may not be waived.

27(A)(2) Any agreement between parties to an employment relationship in terms of which the employee agrees to assign to the employer inventions yet to be made, is invalid.

27(A)(3) (a) Any agreement to assign ownership or transfer any rights in an invention not falling within s 27(A)(1) shall be invalid unless it provides for a fair payment to the employee.

(b) An employee who disputes the fairness of the payment in s27(A)(3)(a) may approach the Commissioner of Patents make an order for a fair payment.

27(A)(4) Where the parties are subject to a collective labour agreement which deals with ownership of an invention made by an employee and related matters, the terms of the collective agreement shall apply only to the extent that they are more favourable to the employee than any term in the employment contract.

27(A)(5) The Minister must publish Guidelines for the interpretation of sections 27A to 27 C.

Guidelines

The Guidelines which must be developed by the Minister should relate to the following, amongst other concerns which may arise:

1. The reference to an 'employment relationship' is to employment as understood in the context of the BCEA and LRA. This will ensure that it is wide enough to apply to those work relationships in which the employee is in a weaker bargaining position and also to provide sufficient opportunity for employers to rely on the provision where appropriate. This will result in a broader group of inventions to be considered when applying the provision.

2. In calculating a fair and reasonable remuneration, factors to be considered include the usual salary of the employee, the nature of the industry, whether inventions of the type are a regular occurrence in the industry, the relative value of the profit derived from the invention, the contributions of other employees to the development of the inventor, amongst others. The aim is to ensure firstly that the bargain struck between the parties is fair in the sense that it has taken into account the value of the employee's contribution to the employer. It is only with hindsight that this is possible. Secondly, it must be reasonable for the employee to receive the amount, in light of the contributions of others, for example.

3. The provisions of section 27(A) apply to patentable inventions only.

4. A fair payment in the context of section 27(A)(3)(a) would not include the salary which the employee receives from the employer, or the contributions of other employees. However, the contribution of the employer will be relevant here, for example, where it has provided the resources. The purpose of this provision is to mitigate the inequality in bargaining power between the employer and employee so that the employee is able to negotiate with the strength of an independent inventor. The incentive function is not primary here.

/end

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